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THE

INSTITUTIONS

OF THE

PRACTICE OF MEDICINE;

DELIVERED

IN

A COURSE OF LECTURES

BY

JO. BAPTIST BURSERIUS,

DE KANIFELD.

TRANSLATED FROM THE LATIN,

BY WILLIAM CULLEN BROWN, M. D.

EXTRAORDINARY MEMBER, AND LATELY ONE OF THE ANNUAL PRESIDENTS OF THE ROYAL MEDICAL SOCIETY OF EDINBURGH.

IN FIVE VOLUMES.

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ERRATA.

Pag. 197.	*lin.* 11.	*for* laterally *read* latterly
244.	1.	*transfer the comma after* removed *to* thence,
255.	9.	*for* furface *read* head
268.	23.	*for* opifthonos *read* opifthotonos
301.	17.	*for* pro- *read* truly
364.	9.	*after* mann *insert* er
376.	17.	*for* are *read* is
382.	8.	*for* informalis *read* infernalis
496.	3.	*for* deturgent *read* detergent
525.	23.	

THE

AUTHOR'S PREFACE.

IN the former Volumes I have embraced the whole claſs of fevers, together with the febrile exanthematic diſeaſes. I now proceed to the explanation of the diſeaſes of particular parts, eſpecially internal parts, beginning with thoſe of the head. For many reaſons, I have preferred to every other arrangement, however ſpecious and ingenious, that which the nature and ſeat of the complaint, the injury ſuſtained by the functions, the connection of the parts, and the firſt view of the diſeaſe itſelf, point out;—regardleſs of the cenſure, or reproaches, of thoſe who may exclaim againſt my following the common and ancient method, notwithſtanding the great variety of thoſe of late introduced into the Schools by the Noſologiſts of our own times. But if there be any fault in this, I hope that they will readily forgive me, on

my candidly acknowledging that I am not naturally inclined to be much captivated by mere novelty. For I am not in the practice, as is commonly done, of ſearching after what is merely new, but what is juſt, right, and recommends itſelf by being attended with ſolid advantage. I admire the labours of Noſologiſts in endeavouring, after the example of Botanical claſſification, to arrange diſeaſes into orders, genera, and ſpecies; nor would I wiſh to deprive their works of the praiſe due to them, on account of their greatly aſſiſting the memory, both in the naming of diſeaſes, and in forming the diagnoſes of them. But all the ſyſtems which have been hitherto framed, however elaborate, are liable to nearly the ſame objections which have been brought againſt thoſe of the Botaniſts. And, to ſay nothing of the barbarouſneſs of the new terms, which have been adopted, as well as the arbitrary rejection of thoſe long eſtabliſhed, what confuſion and deviation from received doctrines are the conſequence, and in what darkneſs does the ſubject ſtill continue to be involved! The moſt remarkable and frequent conſequence is, that diſeaſes, which are widely different from

one another, are collected together, and, contrary to the intention of nature, forced into the ſame claſs: while others, which are by nature nearly allied, and, as it were, bound together, in compliance with their arbitrary ſyſtem, are, with great abſurdity, ſeparated from one another. I ſhall illuſtrate this by a few examples, to put it in a clearer point of view. Sagar, in the ſecond edition of his ſyſtem, lately publiſhed, makes his *Thirteenth Claſs* to conſiſt of thoſe diſeaſes which, after Sauvages, whoſe example he follows, he denominates *Veſaniæ*. In *Order* I. of this Claſs he places the *Hallucinationes*, a term perfectly new and unheard of. To theſe are referred various kinds of diſeaſes, namely, *vertigo*, *ſuffuſion*, or *cataract*, *diplopia*, or double viſion, *ſyrigmus*, or tinnitus aurium, *hypochondriaſis*, and *ſomnambuliſm*. Who does not at a ſingle glance perceive the very wide difference which ſubſiſts between vertigo and cataract, between tinnitus aurium and double viſion, and between hypochondriaſis and ſomnambuliſm? Every novice in medicine, however ſlightly acquainted with pathology, muſt be capable of forming a

judgment on this point. In *Order* II. of the ſame Claſs he places his *Moroſitates*, a term of diſeaſe equally new, and hitherto wholly unknown to phyſicians. Among the moroſitates he claſſes *pica*, *bulimia*, *polydipſia*, *antipathia*, or averſion, *noſtalgia*, or the deſire of returning home, *panophobia*, or terror during ſleep, *ſatyriaſis*, or an erection of the penis attended with a furious venereal deſire, *nymphomania*, or furor uterinus, *tarantiſmus*, *hydrophobia*, and, laſtly, *rabies*. The conſequence of ſuch a claſſification is, that terror during ſleep is confounded with ſatyriaſis, noſtalgia with furor uterinus, tarantiſmus with hydrophobia, thirſt, morbidly increaſed appetite, and canine madneſs;—diſeaſes which, if I miſtake not, differ as widely from one another as it is poſſible to conceive. Such are the incongruities, and ſuch are the *veſaniæ* and *hallucinationes* of the new ſyſtem! But as I have already ſhewn that this arrangement unites together diſeaſes ſo oppoſite in their nature, it will be proper to adduce an inſtance from the ſame author of thoſe which, although nearly allied, from the fault of the ſame ſyſtem are improperly disjoined. In *Order* I. Claſs XI. in which he has

brought together the *inflammations*, or *phlegmaſiæ*, are enumerated the *phlegmaſiæ muſculoſæ*, namely, *phlegmon*, or inflammatory ſwelling, *cynanche*, *myoſotis*, and *carditis*. In *Order* II. are enumerated the *phlegmaſiæ membranaceæ*, namely, *phrenitis*, *diaphragmatis*, *pleuritis*, *gaſtritis*, *enteritis*, *epiploitis*, *cyſtitis*, &c. In theſe two *Orders* only the true and legitimate, or phlegmonic, cynanche, or angina, and pleuritis, are ranked. Hence the other genera, or ſpecies, of theſe two complaints, as the ſpurious, catarrhal, ulcerous, gangrenous, convulſive, and paralytic angina, &c. as alſo the rheumatic, putrid, bilious pleuritis, and the ſpecies named *verminoſa*, &c. although, with regard to the ſeat of the complaint, and the ſimilarity of the ſymptoms, nearly connected together, by this ſyſtem are prepoſterouſly ſeparated, moſt of them being referred to other claſſes. Who can vindicate the propriety of this, or affirm that it is calculated either for the advantage of the ſtudent, or convenience of the practitioner? It would be irkſome to point out all the abſurdities of theſe ſyſtems of Noſology. It will be ſufficient to adduce

another example of the almoſt endleſs varieties of ſpecies which are propoſed and injudiciouſly multiplied by ſome authors. Thoſe, in particular, ſeem to be ſuperfluous which are derived from ſome ſlight acceſſory ſymptom being preſent. Such authors, likewiſe, as conſider every ſymptom as a diſeaſe, ſeem to labour under an egregious error. Yawning, ſtretching, and febrile ſhivering, are looked upon by them in the light of ſo many diſeaſes; and thus do they unprofitably augment, *ad infinitum*, the number, not only of the genera, but alſo that of the ſpecies of diſeaſes. I therefore beg leave to call the reader's attention to what has been obſerved by Ludwig, independent of any opinion I may entertain. After reviewing the ſyſtem of Noſology publiſhed by Sagar, he remarks: " If I may be allowed to give my opinion of this work, as well as of that of Sauvages, and every other compoſed after the ſame plan; I am ſenſible of the extreme difficulty of ſuch an undertaking, and of the vaſt pains which have been beſtowed upon it, particularly by Sauvages in the compoſition of his Noſology: I muſt confeſs, however, that theſe very nice diviſions of ſymptoms create more confuſion

than they afford light; and that ſuch ſyſtems appear to me to be altogether void of any true foundation of diviſion *." Thaer approaches nearly to the ſame opinion which Ludwig entertains, affirming that thoſe authors, who conſtruct their diviſions of diſeaſes from their ſymptoms, generally deviate widely from the truth: becauſe the ſame diſeaſe, proceeding from the ſame cauſe, varies exceedingly according to the diverſiy of the patient's conſtitution, age, manner of living, and the method of cure employed, in like manner aſſuming different ſymptoms; while, on the other hand, diſeaſes, which are completely different from one another, in many ſymptoms frequently agree; and therefore, if merely on account of the agreement of the ſymptoms they be comprehended under the ſame ſpecies and name, very oppoſite affections muſt neceſſarily be confounded †. For which reaſons it appeared better to arrange the diſeaſes of particular parts according to their local ſituation. For every one of

* *Comment. de Reb. in Med. et Scient. Nat. geſt.* vol. xviii. P. 3. p. 451.

† *De Act. Syſt. Nerv. in Febr.* § 2. p. 5. *not. a & b.*

them diſcovers itſelf, not only to the patient, but alſo to the phyſician, by the diminiſhed, morbid, or defective action of ſome part. In my opinion, the phyſician will be better enabled to aſcertain under what kind of diſeaſe a perſon labours, by having explained, one after another, the particular diſeaſes in which ſuch a morbid action takes place, and by the ſymptoms being pointed out by which the different kinds of injuries are manifeſted, than by the ſpecies and varieties of diſeaſes being ſparſely enumerated, or by being obliged to ſearch for them in various parts, or claſſes, of a work, diſtant from each other. I have alſo thought proper rather to deſcribe than define diſeaſes, on account of their proximate cauſes being generally unknown, in conſequence of which, according to Zimmerman *, Locke †, and Nietch ‡, they are more properly derived from their phenomena than their eſſence. I have admitted very few ſpecies and varieties, that I might not be guilty of the ſame fault which I have condemned in others; and ſuch

* Zimmerman *On Experience.*

† *On the Human Underſtanding.*

‡ *Pathologia, &c.*

as I have ſet down are generally taken from evident cauſes, a practice which I find approved by other authors of great reputation *. But although I have been very ſparing in eſtabliſhing genera, ſpecies, and varieties, I underſtand that there are ſome idle people, incapable of any labour themſelves, who are perpetually and loudly exclaiming that the acquiſition of our art ought ſtill to be ſhortened and expedited, which they allege has not been done by the numerous diviſions, varieties, precepts, and cautions, with which theſe INSTITUTIONS ſeem to abound: nay, that ſtudents, in conſequence of the variety and difficulty of the ſubjects which occur, are deterred from the purſuit of the ſcience, and almoſt brought to deſpair of ever attaining a competent knowledge of it. They affirm, moreover, that all theſe minutiæ are ſuperfluous, on account of many phyſicians having acquired honour, wealth, and celebrity, without their aid. But ſuch perſons as ſtart theſe objections, in fact, by graſping at too much, gain nothing at all. I have made a point of rejecting too numerous or nice diſtinctions and varieties, or

* Zimmerm. l. c. p. 302.

ſuch as do not correſpond with the nature of the diſeaſes ; which is ſo certain a fact, that if they be compared with thoſe of ſome Noſologiſts, the injuſtice of the charge will at once appear. With regard to a few neceſſary diſtinctions, which I have put down for the ſake of underſtanding the ſubject more clearly, and which I always took care to demonſtrate in the patients themſelves to my pupils, ſo long as I continued in the Clinical Chair of the Hoſpital at Pavia, who can oppoſe or reject them, as without ſuch aid no Art nor Science can ever exiſt or be taught ? I confeſs that for theſe, and many other reaſons, Medicine is a Science the knowledge of which it is very difficult to acquire. But will it become more readily underſtood by omitting thoſe things which appear to be ſo intimately interwoven, and almoſt co-exiſtent with it? Will it not rather be rendered mutilated, imperfect, and nugatory? In the other Sciences no one has either omitted, or conſidered it as proper to omit, the neceſſary opinions, diviſions, ſubdiviſions, and varieties, which flow from the ſubject. Shall orators and naturaliſts, ſhall botaniſts and chemiſts, be allowed to employ them, and ſhall medicine alone be denied this

privilege? If the ſtudy of Medicine is not to be facilitated by neglecting theſe things, and by a ſcanty ſelection of precepts, how otherwiſe is it to be promoted? In ſpite of the objections of theſe ſelf-ſufficient critics, the ſtudy of Medicine cannot be facilitated and ſimplified in any other way than by adopting a neat, perſpicuous, and convenient arrangement in the explanation of the ſcience; by previouſly eſtabliſhing clear, diſtinct, and adequate ideas of every particular; by giving as full a hiſtory as poſſible of the ſeveral diſeaſes; by avoiding hypotheſes and ſpeculative opinions; by throwing out doubtful, uncertain, and controverted points, if they cannot be elucidated, or by ſeparating them from ſuch facts as are certain and demonſtrated; by remarking the facts and obſervations of every age; by diſtinguiſhing one diſeaſe from another; and by noticing their different ſpecies, varieties, and degrees; by pointing out the ſymptoms by which the preſence of diſeaſes may be aſcertained, and their approach foretold, and thoſe, not of a general nature, but ſuch as are peculiar to every complaint; and, laſtly, by giving an ample method of cure, calculated to the varie-

tiesand cauſes of complaints, to the ſeaſon, to their degree of violence, to the climate, and to the patient's age, ſex, and temperament, which cannot be done without employing many precepts, exceptions, and cautions. Thus the difficulties and obſtacles with which the ſcience is ſurrounded, and by which its ſtudy is rendered difficult and tedious, are obviated, and almoſt made to diſappear. All this I have endeavoured to execute according to my ability. It is not for me to ſay whether I have attained my object: I leave this to the deciſion, either of ſuch as have been long engaged in practice, or of thoſe ſtudents who commence practice for the firſt time after quitting the Univerſity. The former ſet will at once aſcertain whether I have all along followed nature, and regulated every thing by the teſt of experience; the latter will perceive whether or not my deſcriptions agree in all reſpects with what they diſcover to occur in their patients, and whether or not they derive any benefit from them in dubious caſes. I prefer abiding by the deciſion of either of theſe ſets of readers. Let others depreciate and reject my labours, if they pleaſe. Let them, as

uſual, ſearch after Compends, Manuals, and Compilations, in which they will find both the principal genera of diſeaſes briefly deſcribed, and ſome general methods of cure, frequently empirical, which may be eaſily read and underſtood, even by ſuch as have not been regularly educated in the ſtudy of Medicine. Let them next, without any labour or ſtudy, ſet up for phyſicians; at firſt ſight confidently determining the nature of diſeaſes reduced to a few heads; diſregarding the manifold variety of cauſes, and not loſing time in the careful examination of them; ſnatching at any one which firſt offers itſelf to them, and ſupporting it, when once conceived, with all imaginary obſtinacy. Truſting like mountebanks to their noſtrums and antidotes, let them promiſe health to all who apply to them. In one word, let them make experiments at the expence of their patients lives. And if, in conſequence of this compendious method of diſpatching buſineſs, they ſhould commit any very groſs error in aſcertaining a diſeaſe, as afterwards appears on diſſection, or if the event ſhould declare the falſity of their prognoſis with regard to life or death, —which frequently happens,—let them not

deſpond, but proceed boldly to affirm that they have ſhortened and facilitated the ſtudy of Medicine! For my own part, I ſhall reſt ſatisfied with a few judicious readers, anxiouſly engaged in the purſuit of truth; who are well aware that a knowledge of the Science cannot be acquired without conſtant, and almoſt indefatigable labour; and that a perſon can have no pretenſions to it without having previouſly exerciſed the deepeſt reflection, and beſtowed the cloſeſt attention, upon diſeaſes at the patient's bed-ſide.

PART I.

CHAPTER I.

OF THE HEADACH.

1. IN treating of the diſeaſes which occupy particular ſeats, eſpecially internal ones, I ſhall commence with the head, the ſupreme and nobleſt part of the body, in which the mind and its faculties appear to reſide. Among the diſeaſes to which it is liable, the firſt that offers itſelf is the *pain*, which properly belongs to the faculty of ſenſation. It is not uniformly defined in the ſame manner; although, in my opinion, thoſe authors ſeem to be in the right, who conſider it "as a diſtreſſing ſenſation, which the mind perceives in ſuch a manner as to refer it to a part of the body which ſuffers unuſual violence from any cauſe, whether external or internal *." That pain, therefore, which in a particular manner is referable to the

head, may be defined to be, a certain uneafy and unufual perception of heavinefs, pungency, diftention, compreffion, throbbing, or fome other difagreeable fenfation affecting the whole head, or a part of it. This perception correfponds with a particular, unknown change, eluding the fenfes, impreffed on the *fenforium commune* by fome power, and which at times is fo violent, inherent, and permanent, that even after it has ceafed, or the caufe has been removed, the idea, or image of the pain, whatever part it had occupied, may remain, and be perceived by the mind, as is felt in particular by people after the amputation of any of their limbs †.

* Caldan, *Inftit. Pathol.* c. xxi. § 304. † *Id. ibid.* § 36. p. 232. and Van Swieten, *in Aphor.* Boerhaav. *De Cogn. et Cur. Morb.* § 220.

2. Hence, according to the nature of that *fenfation* (par. 1.), the pain of the head is either *obtufe* and *heavy*, or *lancinating* and *pungent*, or *diftracting*, or *oppreffive*, or *throbbing*, or *rending*, and fo forth. Moreover, if the pain be recent, or occafioned by evident caufes, though not too violent, it is generally named *cephalalgia*; if inveterate and obftinate, *cephalæa*; if it affects one fide of the head only, *hemicrania*; laftly, it is named *continued*, or *periodical*, according as it conftantly diftreffes the patient, or recurs at ftated periods, ceafing altogether, or remitting during correfponding intervals. There is alfo a pain which

is confined to a particular ſpot, about the ſize of an egg, when it is ſometimes named *ovum*; but it is called *clavus*, when the pain is intolerable, occupying a much ſmaller ſpace, and cauſing the idea of a ſharp nail being forced deep into the brain: and as this laſt ſpecies of pain frequently affects hyſterical women, it is therefore commonly named *clavus hyſtericus*.

3. As the pain affects ſometimes the internal, ſometimes the external parts of the head, it is very properly divided into *internal* and *external*; between which it is of the greateſt conſequence to be able to diſtinguiſh accurately. For obſervation has ſhewn, that its cauſe is not always ſituate in the head, but ſometimes in other diſtant parts of the body, by conſent with which the head is affected. According, therefore, as the headach is occaſioned in one or other way, another diviſion of it ariſes, namely, into *idiopathic*, and *ſympathic*. Some authors alſo, beſides theſe diſtinctions, have framed others, according to the variety of its origin and cauſes. Hence it is not improperly diſtinguiſhed into *protopathic*, or primary, *deuteropathic*, or ſecondary, into *ſymptomatic*, *febrile*, *inflammatory*, *ſanguineous*, *bilious*, *phlegmatic*, *rheumatic*, *catarrhal*, *arthritic*, *ſcorbutic*, *venereal*, *hypochondriacal*, *hyſterical*, and *convulſive*, and, laſtly, by Ettmuller, into *warm* and *cold*; although moſt of theſe may be in ſome meaſure referred to the former ones.

4. To the immediate cauſes of headach belongs, whatever preſſes upon, diſtracts, compreſſes, erodes, or in any other way irritates and injures the parts, whether internal or external, which are endowed with the faculty of ſenſation. Under this head comes, too violent motion, or exceſſive quantity, or congeſtion of the blood, diſtending the veſſels, and ſometimes the cellular membrane, and other receptacles of the common integuments, of the muſcles, of the aponeuroſes, and of the pericranium, externally, and of the meninges and brain, internally; an accumulation of ſerum, particularly that which is acrid, or its being ſuddenly effuſed in conſiderable quantity within the membranes and ventricles; inflammation; eryſipelas; a ſcorbutic, venereal, phlegmatic, arthritic, or rheumatic depravation of the fluids; herpetic, ſcabby, variolous, and other kinds of acrimony; the virus of the *plica polonica*, eſpecially when forced in, or retained *; various metaſtaſes; tumours; abſceſſes; exoſtoſes; tophi; caries; a mal-conformation of the cranium itſelf; induration, or oſſification, of the dura mater; bony ſcales, or hard, ſharp-pointed warts ariſing in its proceſſes; little ſtony concretions formed in ſome part; the want of the uſual ſutures; any kind of ſpaſms which retard the free circulation of the fluids, and the like, which both by immediately and remotely compreſſing nervous and ſenſible parts, or by irritating and

convulſing them, may excite the pain in various ways.

* Although in the *plica polonica* the hairs become very much injured, and run together in a horrible manner, ſtill I do not claſs this diſeaſe among the diſeaſes of the head, becauſe it appears to me to belong to the univerſal diſeaſes, and to a particular kind of cachexy. Many authors have given a very accurate deſcription of the *plica polonica*, but particularly Saxonia, *Tract. de Plic.* Sennert, *Oper.* T. iii. p. 849. *Ephemerid. N. C. Dec.* 1. *an.* 6. p. 190. Saillant, *Mem. Hiſt. ſur la malad. ſinguliere de la Veuve Melin lû a la Facul. de Med. de Paris au prima menſis de Fevrier.* 1776. But the chief of them is Vicat, the lateſt writer on the ſubject, whoſe pamphlet, entitled *De la Plique Polonique*, publiſhed at Lauſanne in 1775, appears to be highly worthy of peruſal.

† The celebrated Haller, from the teſtimony and experience of ſeveral phyſicians of undoubted authority, obſerves: "Moſt dreadful headachs have been obſerved to ariſe from the cortical part of the brain being in a ſtate of inflammation; from an effuſion of blood in the brain; from a fungous excreſcence under the cranium; from grumous blood compreſſing the *corpus ſtriatum* and *corpus calloſum*; from a ſcirrhous gland at the falciform proceſs; from a collection of blood in the anterior ventricle; from a calculus in the pineal gland; from a ſcirrhus in the cerebellum; from a hard body preſſing upon the corpus calloſum; from a putrid or ichorous taint, or abſceſs, of the brain; from ſerum ſtagnating in the ventricles, and conjoined with corruption of the brain, or a ſcirrhous tumor; from ſome ſharp ſubſtance lurking in the brain; from a worm being contained in the cerebellum; from an abſceſs in the cerebellum; from oſſification of the carotids, and concretions formed in them; and, laſtly, from the blood alone, by means of the cold bath, being forced to the head. *Elem. Phyſiog.* T. iv. lib. x. ſect. vii. § 20.

5. Such are the principal cauſes (4.) which accurate diſſection has repeatedly diſcovered and recorded. Not a few eminent phyſicians, however, are of opinion, that the blood is formed into polypi in the ſinuſes of the dura mater, oppoſing the free circulation of the fluids, retarding the return by the veins, and thus occaſioning the pain in the head. Which in fact does not appear improbable, eſpecially in thoſe perſons in whom a mal-conformation, and too great laxity of the ſinuſes ſuffers the motion of the blood to become ſo ſluggiſh, that the fibrous part, and that which is more diſpoſed to concrete ſepa ates from the other conſtituent parts of the blood, and, according to its nature, gradually becomes compacted. But I conſider it as being a very doubtful queſtion, when ſ[illegible] polypi are found on diſſection, whether they exiſted before death, or are the conſequence of it. When they exiſt in fact before death, they contend that the pain then ſtretches along the longitudinal ſinus. But Morgagni, for whoſe judgment I entertain the higheſt reſpect, ſuſpects that not unfrequently the moſt obſtinate periodical headachs, of the ſpecies named *cephalæa* and *hemicrania*, which yield to no remedies, are to be derived from mal-conformations, and particularly from a bony induration of the dura mater, and its appendages *.

* *De Sed. et Cauſ. Morb. Epiſt.* i. n. ii.

6. Among the cauſes of headach muſt like-

wiſe be enumerated, worms neſtling in the brain. But Morgagni rejects this opinion as being erroneous *. For he believes that it is impoſſible to diſcover them in the brain, unleſs they have paſſed into it from without; nor does he think that worms, or the ſmoke of tobacco, and ſnuff, can at all penetrate into the cavity of the cranium, unleſs in conſequence of a paſſage being formed by an ulcer in the nares, or bones of the ſkull; which ſeems quite conſiſtent with reaſon. But ſince ſome eminent phyſiologiſts, on the moſt minute examination, have detected living animalcules in the brain of brute animals, in hydatids, and various viſcera, it is the part of a prudent perſon to ſuſpend his judgment until time ſhall have thrown more light on the ſubject.

* L. c. n. 9.

7. I do not deny, that frequently the cavities of the noſe and frontal ſinuſes, and other parts lying under the ſkin, are infeſted with worms, which either ſecretly find their way thither, or are produced from eggs being depoſited there, and which, by corroding the parts, ſometimes occaſion the moſt excruciating pain, baffling every remedy, and generally not ceaſing before they are ejected from their lurking-places. The ſubjects of this complaint are particularly thoſe who are expoſed to various kinds of flies, eſpecially

ox-flies and horſe-flies, and perhaps alſo butter-flies, and cannot at all times guard againſt the attacks of ſuch enemies, while they ſleep in the open fields, or meadows. For upon thoſe occaſions the animalcules lay their eggs in the noſtrils, or near them, from which the recent inſects are hatched, or they depoſit the worms themſelves,—for ſome of them are really viviparous,—or they are drawn in along with the breath, and are nouriſhed and grow up in their concealment. Likewiſe the eggs of inſects, which have been depoſited in flowers, by ſmelling them incautiouſly, may be drawn into the noſtrils, and hatched there. Inſtances of this kind are to be found in Fernelius *, Trincavelli †, Rolfinck ‡, and other careful obſervers ‖. Nay, it ſometimes happens, that even lumbrici creep up to the noſtrils, and ſettling there occaſion a headach §.

* Pathol. lib. v. c. 7. † Lib. ix. c. 4. ‡ *De Dolore Capit.*

‖ In particular may be conſulted an account publiſhed by Wohlfart, in the year 1768, entitled, *Obſervatio de Vermibus per Nares Excretis*, in which he mentions worms having been ſeen both by himſelf and others. For he relates, that they were paſſed from the left noſtril of a man of ſixty-ſeven years of age, who had been much tormented for eight days with an obſtinate headach and ſwelling of the left ſide of the head, which had been preceded for three days by a conſtant epiſtaxis. The diſcharge of them, which took place to the extent of nineteen, all of them white, was attended with relief to the patient. Being incloſed in a glaſs veſſel containing earth, in a few days they paſſed into blackiſh, hard canker-worms, and, at the

expiry of a month, produced flies, with darkish brown eyes, and very delicate *antennæ*; their body was interfected in eleven different places; and in their head they had two angular, black, and moveable hooks, by means of which, while they endeavour to drag the posterior part of the body in creeping, they strengthen their head, and at other times retract them in such a manner as to conceal them intirely. In the last intersection there was a depression with two marks, and the surface of the body was intirely covered with black, short hairs, thinly scattered. But the author is of opinion that they were generated in this patient, "in consequence of some fly having deposited its eggs in the mucus accidentally hanging from the nose, which being retracted along with the mucus, and cherished in the frontal sinuses, hatched the worms." *Comment. de Reb. in scient. Nat. et Med. gest.* vol. xvii. p. 150. *et seqq.* Razou makes a similar observation, which may be seen in his *Tabulæ Nosologicæ*, p. 265. In the Edinburgh Medical and Philosophical Commentaries, also, we are informed by Hill and Monro of worms like *scolopendræ*, an inch and an half long, having been excreted from the nose. A few years ago, Gelmetti, the first physician in Mantua, who had studied the Practice under myself in the Hospital at Pavia, communicated to me the history of an excruciating pain in the head, which was at length removed by the discharge of three little worms. These worms, however, were not passed from the nostrils, but from a small tumour which had gradually arisen at the apex of the nose. A racking pain had first been felt in the forehead, from whence it had passed to the root of the nose, and a small tumour having at length broken out, as I have already said, and from which worms were discharged, it intirely disappeared. After they had been kept for some days in a glass, to undergo their transformation, as he pursued the study of Natural History with great eagerness, he was highly delighted to find them changed into black flies, of a large size, such as are observed to infest horses.

§ In Bartholin is to be seen the first epistle of Langelotte,

in which the following hiſtory is detailed. "A country-woman, after having been long afflicted with dreadful head-achs, which at length increaſed to ſuch a height, as to force her to run about like one diſtracted, came to the clergyman of the pariſh of Neukirchen, then celebrated among the peaſantry for his ſkill in diſeaſes, and who has not been long dead. He immediately adminiſtered the ſternutatory which he had been accuſtomed to employ in headachs, by which her head being violently ſhaken, one worm was diſplaced, and compelled to paſs out at the noſtril; in conſequence of which the rending headach immediately ſubſided." The worm was as long as the middle-finger. *Epiſt. Medicinal.* Cent. 2. Ep. lxxiv.—Saltzman makes mention of a violent hemicrania, which continued almoſt a year, accompanied with a ſpaſmodic contraction of the eye-brow, occaſioned by a worm lurking in the frontal ſinus, and which immediately ceaſed on the worm's being diſcharged. *De Verm. e narib. Excuſſo*, § v.—My former pupil David Buzz, who now practiſes with great ſucceſs in his native country, has communicated a ſimilar caſe to me. A country-man labouring under a very diſtreſſing hemicrania, had been treated with a great variety of remedies to no purpoſe, but was at length reſtored to perfect health in conſequence of a worm, of the ſpecies of the *lumbrici teretes*, having been diſcharged from the noſe.

8. Hitherto enough has been ſaid of the more obſcure cauſes of the complaint. It remains for me to give a brief enumeration of theſe which are more remote and manifeſt. They are generally conſidered as being the ſuppreſſion of uſual evacuations of blood; the intermitting of veneſection in thoſe who have been accuſtomed to it; ulcers being imprudently dried up; the abuſe of fermented liquors; inſolation; heat; cold; wind; the prevalence of the ſouth winds; re-

pletion; crudities in the *primæ viæ*; lumbrici and other ſpecies of worms ſettling in the ſtomach or inteſtines, hypochondriaſis, or hyſteria; pungent, or heavy ſmells; exceſſive ſenſibility of the nerves, as it is called *; hard riding along rough roads; a blow, or fall; contuſions; and ſo forth.

* Balloni had already recogniſed this as one of the cauſes; for, according to Bonetus, in his *Epit.* (*2d epid.* p. 162.), he obſerves: "Certain pains ariſe from acuteneſs of ſenſation, as ſome people are very liable to fainting, owing to exceſſive ſenſibility."

The Diagnosis.

9. The external parts are known to be affected, if the hair becomes hard as it were, and the pain is aggravated merely by touching it, or compreſſing the ſkin; if any redneſs or ſwelling are obſervable, while the functions of the brain are little, or not at all, affected. On the other hand, it appears to be ſituate within the ſkull by the preſence of the oppoſite marks; particularly when the pain is attended with mental ſtupor, dimneſs of ſight, tinnitus aurium, dulneſs of hearing, or when every kind of noiſe cauſes uneaſineſs; nay, according to Galen, the pain then ſtretches all the way to the roots of the eyes. The voice alſo ſometimes becomes interrupted without any evident cauſe; the deglutition is affected; the muſcles of the neck and jaws are contracted and

painful; the limbs are ſeized with ſhaking; the head is diſtreſſed with frequent vertigo, and, if the diſeaſe is very violent, vomiting, or a deſire to vomit, and delirium, at length come on. Sometimes ſuch is the injury ſuſtained by the internal parts, that it is propagated to the retina and choroid coat, the eyes becoming very impatient of light, and extremely painful, or, being ſuffuſed with redneſs, they ſwell *, and water.

* The eyes at times become ſo inflamed and ſwelled from this cauſe, as to put on the appearance of ophthalmia, and that too of the primary kind, which will appear from the following caſe. An unmarried lady, of twenty-five years of age, who dwelled hard by St Francis's Chapel in Fayence, in the month of November, ann. 1752, was attacked with a very acute pain, which affected the whole left ſide of her head, and ſhe continued to be tormented with it for almoſt fifteen whole days, without applying for medical aſſiſtance. She was at length obliged to call a phyſician, when her left eye had become red and ſwelled in conſequence of ophthalmia, without being accompanied with any remiſſion of the complaint, but, on the contrary, the diſeaſe having increaſed to ſuch a pitch within a few days, that the whole external ſurface of the eyelids and neighbouring parts was raiſed into a great, red, and painful tumour. Likewiſe her whole cheek was ſwelled, and was all over ſuffuſed with a red colour, leaving a white mark when preſſed with one's finger. A perſon would have pronounced it to be an eryſipelatous inflammation. There was preſent a very violent fever, attended with the greateſt reſtleſſneſs and anxiety. But the palpebræ were ſo ſhut in conſequence of the ſwelling and inflammation, as to completely conceal the ball of the eye. Immediately the method of treatment which is calculated for the greater inflammations was employed, and the mildeſt emollients were applied externally.

A few days afterwards, however, the inflammation was ſucceeded by ſuppuration, and, an abſceſs at the external angle of the eye burſting ſpontaneouſly, it was found to contain much very fetid pus, which was poured out in great quantity, not only from the cavity of the orbit, and ſurrounding parts of the eye, but alſo from the greater part of the cheek, when they were preſſed. Hence the ſwelling of the palpebræ and neighbouring parts in a ſhort time ſubſided, ſo as to admit of the eye being again ſeen and examined. The whole adnata then appeared very red, and ſo much ſwelled as to riſe above the ſurface of the cornea, in the ſame manner as takes place in *chemoſis*. The Cornea notwithſtanding retained its ſhining appearance and pellucidity. But the pupil was larger than uſual, as happens in *mydriaſis*, and that eye had completely loſt its ſight. On the fourth day after the burſting of the abſceſs, a violent and univerſal diſtenſion of the nerves came on, which was ſhortly after ſucceeded by palſy of all the limbs, accompanied with complete loſs of ſenſe, languid, irregular breathing, attended with ſnoring, a ſmall intermitting and defective pulſe, and thus in a very ſhort period the patient breathed her laſt. Twenty-four hours after death, the head was opened, when the whole adipoſe and cellular membrane, which extends under the ſkin to the eye-brows, orbit, and cheek, all the way to the lower jaw, was found deſtroyed; and, in place of it, the ſpace between the ball of the eye and its muſcles, and the bottom of the orbit itſelf, full of true and very fetid pus. The eye alone ſeemed uninjured, as well as the fluids contained in it. On the brain being laid bare, the anterior left lobe, all the way to the ventricle, appeared in a great meaſure deſtroyed in conſequence of ſuppuration having taken place. The ſuppuration ſurrounded the whole optic nerve, without the nerve itſelf ſhewing any injury, either externally or internally; and it communicated without the hollow of the orbit. Dallarmi and Laurence Benedictus, who were at that time clinical ſtudents, were preſent at the diſſection.

10. Sometimes the pain, although it is ſituate

internally, extends not only to the eyes, but likewiſe to other external parts, on account of the *dura mater*, when the principal cauſe of the pain is contained in it, although it ſeems to be void of ſenſe, through the pericranium and blood-veſſels having a connection with the external parts of the head, or on account of theſe laſt being drawn into conſent by means of the nerves. If the ſenſe of pain is felt deeper, it generally implies that the brain, and particularly the medullary portion of it, are affected; nor is it abſurd to ſuppoſe that in this caſe the *pia mater*, which ſtretches under the lateral and other ventricles of the brain and its baſe, is very much affected *, provided the ſeat of the pain is not ſuppoſed to be it, but the white and medullary part of the brain, compreſſed, and otherwiſe irritated by it. And hence it will not be a matter of great ſurpriſe if the pain ſometimes likewiſe proceeds to the crown of the head, becauſe the brain, which is diſtended in all directions, may be likewiſe preſſed againſt the vertex, or becauſe the *pia mater*, which ſtretches along to that part, injures the medulla of the brain there, and ſo gives riſe to a ſimilar painful ſenſation in it.

* Morgagni, l. c. Epiſt. 1. n. 7.

11. But it is of conſequence to diſtinguiſh the different cauſes from which the pain ariſes. I ſhall, therefore, with all manner of care, enumerate the ſymptoms peculiar to each of them.

And, firſt, it appears that the complaint is occaſioned by the blood, from plethora being preſent; from the turgeſcence of the veins and arteries; from the great, full, violent, or ſometimes ſuppreſſed pulſe; from the heat about the forehead; from the throbbing of the temporal arteries; from the *tinnitus aurium*; from the impatience of light; from the redneſs of the face or eyes; from the ſanguine temperament; from the patient's youth; from hemorrhages *; and from cauſes which have increaſed the quantity of the blood, or quickened its motion and impetus to the head †.

* Vandermond, *Recuiel d' Obſervations, &c.* vol. viii. p. 275.

† I do not here ſpeak of the pain which accompanies inflammation. For I ſhall more properly treat of the inflammatory headach, and point out its ſymptoms, when I come to diſcuſs the ſubject of *cephalitis* and *phrenitis*.

12. The pain ariſing from the ſerum or phlegm, generally occurs in thoſe who are of a phlegmatic temperament, of a cachectic and wan habit, and people in old age and in childhood; and it is preceded by the cauſes which occaſion a ſuperabundance of watery and pituitous fluid. In this caſe the face is pale and ſwelled; the veins ſubſide; the limbs become yellow and cold; no heat nor pulſation can be perceived; there is a propenſity to ſleep, which ſymptoms are generally preceded by torpor, vertigo, inſenſibility, and deep ſleep. But in particular there is pre-

ſent a catarrh, by which the pituitary membrane and other parts are affected.

13. We are told by Dolæus, that this pain (12.) is accompanied with a ſenſe of heavineſs, or weight, together with ſluggiſhneſs and ſtupor of mind: while, if it is occaſioned by the bilious humour, that it is very acute, nay lancinating, and attended with remarkable heat. Morgagni in ſome meaſure agrees with Dolæus when he inquires into the cauſe both of the acute and obtuſe pain. For although he explains the matter ſomewhat differently, he acquieſces in opinion with him when he ſuppoſes that, if in the ſide affected with the pain the ventricle is filled with pure, inſipid water, a more obtuſe pain ariſes, although all the cavities be filled; while, if it abounds with impure, acrid, or ſaltiſh water, an acute one is the conſequence. For, in the opinion of this philoſopher, mere plenitude does not always appear capable of exciting acute pain, unleſs to the fulneſs be added acrimony of the fluid, or it be of ſuch a nature as on ſuddenly ariſing immediately cauſes a violent ſeparation and dilaceration of the parts. Hence at leaſt it appears highly probable, that an acute and pungent pain, in whatever part it occurs, is generally occaſioned by an acrid and pungent fluid; and that a dull and obtuſe one proceeds from a watery, or viſcid, but inſipid humour.

* L. c.

14. We may ſuſpect the preſence of worms and little inſects, if the pain continues fixed and obſtinate at the root of the noſe, where it is joined to the forehead, or where one or other frontal ſinus is ſituate, and reſiſts every remedy employed; if the patient is affected with frequent ſneezing; if the noſtrils are dry, or only one or other is unuſually moiſt; if they are itchy; if a fetid ſmell proceeds from them, or from the mouth, and vertigo occaſionally recurs *. But it is frequently a more proper and almoſt peculiar ſymptom of the pain's ariſing from this cauſe, that it is conjoined with a ſenſe of gnawing, and that of an animal crawling in the brain.

* Vogel, *Acad. Prælect. de Cogn. et Cur. Morb.* § 420.

15. Sympathetic headach is occaſioned by injuries done to other parts. It very frequently originates in the ſtomach, or even in the uterus. That which ariſes from the ſtomach rather occupies the fore-part of the head. It generally commences with crudities in the *primæ viæ*, or after eating, or a ſurfeit; and is accompanied with nauſea; a bitter taſte in the mouth; vomiting of a viſcid, acrid, acid, or bilious matter; pains of the ſtomach or inteſtines; flatulency; eructation, and other marks of the preſence of indigeſtion. Thoſe who labour under headach from this cauſe are generally relieved, as I have already ſaid, by the acceſſion of vomiting, or

diarrhœa, which do not afford any relief in the idiopathic complaint. It generally affects people when faſting; but in that caſe it is allayed, or even intirely removed, by taking food, by which the ſpaſmodic affection of the ſtomach is overcome, or its acrid, irritating cauſe corrected. But it may be underſtood that lumbrici, and other kinds of worms, from which the ſympathic headach not unfrequently proceeds, are lurking in the inteſtines, from the preſence of the ſymptoms peculiar to them, which have already been enumerated *.

* See the laſt Vol. Chap. Of Worms.

16. The headach which ariſes from the uterus being affected, is felt more in the crown and back-part of the head, and occaſions a ſenſe of cold there *. It generally ſupervenes on the ſuppreſſion, or difficult diſcharge of the catamenia, and hyſteria; and it differs little from that one which proceeds from an affection of the inferior viſcera of the abdomen, or from black bile, or exceſſive ſenſibility, or ataxia, of the nerves, attacking hypochondriacal and nervous people. This pain is generally accompanied with ſpaſmodic affections of other parts, and particularly coldneſs of the lower extremities: and it is almoſt invariably allayed by external preſſure, in conſequence of the feeling of the nerves being either blunted, or altogether interrupted by it.

* Baglivi, *Prax. Med.* l. 1. *De Dolore in genere*, p. 65.

17. Under this head frequently ſeem to fall (15. 16.) the ſpecies of headach named *hemicrania*, *ovum*, or *clavus hyſtericus*. The *hemicrania* generally comes and goes periodically, like a quotidian and tertian intermittent. Hence ſome name it a *diſguiſed*, or *topical intermitting fever*. It commonly begins at ſun-riſe, is aggravated at noon, remitting and altogether ceaſing at ſun-ſet. It is, therefore, by ſome likewiſe named *morbus ſolaris*. It ſometimes performs its courſe in the evening, or at night; but this rarely happens. A very rare caſe of the complaint was obſerved by Petrus Salius Diverſus, a celebrated phyſician of Fayence. It was that of an hemicrania returning periodically every eighth day, with which a prieſt belonging to the order of St Domenico had been ſadly afflicted for no leſs than *three years and ſeven months* *. A perſon would have pronounced it to be perfectly ſimilar to an *octan* intermittent of long continuance, of which mention has already been made †. Sometimes, however, *hemicrania* is cauſed by an arthritic taint, or by a collection of blood in the frontal ſinuſes; but in that caſe it has not ſuch manifeſt and uniform courſes; and moreover ſymptoms of theſe diſeaſes are not wanting. Thus likewiſe it will not be attended with great difficulty to diſtinguiſh the *ſymptomatic* or *ſecondary* headach, in the ſame manner as an

inflammatory, *febrile*, *ſcorbutic*, or *venereal* one, from other ſpecies of the complaint, if we carefully inquire into the primary affection, from which it derives its origin, and detect it by its ſymptoms.

* *Annotat. in lib. Altomari*, cap. xii. p. 394. where the author gives an account of the caſe: his words are, "A clergyman for three years and ſeven months ſuffered an hemicrania in the right ſide of the head, accompanied with a ſevere and acute pain about the temporal muſcle, which uniformly returned every Monday almoſt always at the ſame hour. The exacerbation continued twenty-eight, or thirty hours at moſt, during which he could neither view the light, nor hear any noiſe, without manifeſt diſtreſs, nor could he taſte food. After this time had elapſed, he became perfectly well, and performed all the functions, both natural and animal, properly."
† Vol. i. par. 65.

18. It is evidently much more difficult to know when ſuch a pain proceeds from ſome organic affection (4. 5.). However, the duration of the diſeaſe, and no relief being received from the remedies employed, with the ſymptoms enumerated in par. 9. and 10. and the abſence of thoſe which I have detailed from par. 8. to 16. render our conjecture highly probable. I diſcovered a cyſt, full of pus, about the ſize of a pigeon's egg, covered with a pretty firm and thick membrane, ſituate in the right lobe of the brain, under the parietal bone, where it is joined to the temporal bone, in a very ſtrong man, who, for ſome months, had been dreadfully tor-

mented with a moſt excruciating pain in that part, and which was occaſionally ſo much aggravated, that he was affected with convulſions and tremors all over the body, particularly on the oppoſite ſide, and generally fell down; nor did he receive any relief from the moſt powerful remedies that were employed *. A red ſwelling, like a ſteatomatous one, much about the ſame ſize, was found in the anterior right lobe of the brain, under the cortical ſubſtance, in an old man, who at the end of four months had died of a chronic fever, of frequent recurrence, attended with an almoſt perpetual pain in the crown of the head, and paralyſis of the oppoſite ſide, together with convulſions recurring after irregular periods, there being at the ſame time preſent an ulcerated ſtate of the lungs. A female, arrived at maturity, on a cuticular complaint, under which ſhe laboured, being raſhly forced in, was attacked with a *cephalæa*, the ſeat of which was uncertain, with which for ſome months ſhe was ſo much afflicted, ſometimes attended with fever, that frequently, on account of the agony ſhe ſuffered, ſhe was ſeized with univerſal ſhivering, ſhrieking out, and ſcarcely ever being able to enjoy ſleep; and her pulſe was variable, ſmall, contracted, and irregular, ſeldom frequent. Being at length completely exhauſted with the diſeaſe, ſhe was car-

ried off. On diſſection of the body an abſceſs was found in the medullary part of the poſterior lobe of the brain, near the tentorium, filled with pus, the cavity of which could have contained a large-ſized nut and its ſhell. Fantonus †, on diſſecting a man advanced in life, who for ſeveral years had laboured under a cephalæa, which during the laſt months of his life had been attended with very excruciating pain, diſcovered a hard, whitiſh, red tumour. The patient, when queſtioned concerning the ſeat of the pain, pointed to the crown of the head. He uſed likewiſe to be ſometimes ſeized with epilepſy, and complained of very great acrimony of the ſaliva, and craving hunger. When he ſuffered the greateſt pain his converſation was generally incoherent. At length he expired in a ſtate of profound coma, and convulſed. Nor was any mention of fever made in the hiſtory of this patient.

* This account does not differ much from that given by Lanciſi, *De Subitan. Mortib.* l. c. c. xi. § 11. p. 65.

† *Epiſt. de Obſervat. Med. et Anat. ad Mangetum*, Ep. v.

19. Planc of Rimini found the right lobe of the cerebellum in a great meaſure deſtroyed by an abſceſs, in the caſe of a young nobleman, who, in conſequence of the checking of a diſcharge of pus from the ear on the ſame ſide, to which he had been liable from his infancy, had fallen into a moſt ſevere headach, attended with

an acute continued fever, of which he ſhortly died *. The fever was ſeveral times aggravated in the courſe of the day, and was at the ſame time attended with ſhivering, ſo as to put on the appearance of a hemitritæus. Sometimes loſs of ſpeech and lock-jaw came on, but the voice was ſhortly reſtored. At laſt being ſeized with a palſy, not of the oppoſite ſide, as uſually takes place, and deprived of his ſenſes, he died †. The account alſo which Douglas ‡ gives of a man who was affected with an abſceſs of the cerebellum, deſerves our notice; for he complained of a pain and weight in his forehead. Bleeding, purging, and cantharides applied to the neck, had proved of no ſervice. He was obliged to ſit with his head inclined forward, for the pain was aggravated by the oppoſite poſition. What is very ſurpriſing, he was quite free of fever, nor was he troubled with any ſpaſmodic affections. But he complained of almoſt perpetual ſickneſs, and he could enjoy ſcarcely any ſleep. On the following morning he expired almoſt in a ſtate of ſyncope, which ſuddenly came on, without any convulſion or palſy of either ſide having preceded. In the middle of the cerebellum was found an abſceſs, which contained two ounces of white pus. There was alſo preſent a conſiderable quantity of effuſed pus, which had proceeded from the burſting of the left lateral ſinus, and

probably occaſioned the patient's ſudden death. From the ſymptoms which I have enumerated as having occurred in theſe patients (18. 19.), an attentive practitioner will be enabled in ſimilar caſes to form a tolerably accurate gueſs concerning the cauſe of the complaint. But to divine the more hidden complaints which proceed from an unnatural conformation of the parts, almoſt exceeds the bounds of human ingenuity. Whoever wiſhes to conſider the hiſtories of moſt of the cauſes which come under this head (4. 5.), in order to be the better enabled to form the diagnoſis, may conſult Bonetus ‖, Fantonus §, Morgagni ¶, Lieutaud **, and other authors who have collected facts on the ſubject, but particularly the medical journals, and the various Tranſactions and Commentaries which are publiſhed ††.

* *Storia Medica d'una Poſtema del lobo deſtro del Cervelletto, &c.* † We find a pretty ſimilar caſe recorded in the *Medical Commentaries by a Society of Gentlemen in Edinburgh*, of a man thirty-ſix years of age, which it may not be improper to quote here. From his infancy he had been accuſtomed to an occaſional diſcharge of pus from his right ear; but he did not experience much inconvenience from it. He had only loſt the hearing of that ear ſome years before. It was at length, however, affected with a moſt excruciating pain, which in a ſhort time not only ſpread to the head, but likewiſe excited nauſea, attended with a gnawing ſenſation at the mouth of the ſtomach. Upon the tenth day the patient fell into a ſleep and kind of ſtupor, and during his ſleeping ſpoke incoherently. On the following day he became completely

delirious, raved, and was affected with fever. On the twelfth day delirium and deep ſleep alternated with one another; a looſeneſs came on; and in the evening he became lethargic. At night the limbs were occaſionally convulſed; and frequent ſubſultus tendinum took place. All theſe ſymptoms increaſed on the 13th, 14th, and 15th days. The convulſive affections were more frequent; the delirium more manifeſt; the pulſe upwards of an hundred; a ſtrangury was preſent; the pupil was fixed and dilated, and could not be made to contract on the application even of a bright light. On the ſixteenth day a complete loſs of ſenſe came on. To the frequent convulſive affections, and ſubſultus tendinum, difficult reſpiration was likewiſe added; the pulſe was extremely various, but generally very frequent. The bladder was diſtended with urine. On the ſeventeenth at day-break he expired apoplectic. On opening the ſkull the back part of the middle lobe of the right hemiſphere was found adhering cloſely, for the breadth of about two fingers, to the dura mater, where it looks towards the os petroſum, and likewiſe to the *tentorium cerebello ſuper-extenſum*. Underneath, in the ſubſtance of the brain itſelf, an abſceſs was diſcovered, containing nearly two ounces of very fetid, greeniſh pus, and had corroded the brain itſelf. The ſurface of the left *corpus ſtriatum* appeared inflamed. Likewiſe each *thalamus* of the optic nerves was tinged with a red, dark colour. Inferiorly and poſteriorly there was ſome greeniſh pus. The *ſeptum lucidum*, *fornix*, and ſides of the third ventricle, together with the anterior proceſs of the cerebellum, which lies above the valve of Vieuſſen, cohered more laxly than uſual, were green, and emitted a very fetid ſmell. In the ventricles two ſmall ſpoonfuls of limpid lymph were found. The dura mater, where it ſurrounds the os petroſum, was black. The os petroſum itſelf was ſomewhat obliterated, compared with the oppoſite one, but by no means carious. The paſſage of the right ear was filled with brown, greeniſh, fetid pus, with which in like manner the whole cavity of the tympanum abounded, and its membrane

and bones ſeemed to have been long before completely deſtroyed.

‡ *Edinburgh Medical Eſſays.* ‖ *Sepulchret. Anatom.* l. 1. ſect. 1. *De Dolore Capitis.* § *Obſerv. Anat.* iii. vi. ix. xxv. Likewiſe *Epiſt. ad* Manget. vol. viii. n. 3. 6. ¶ *De Sed. et Cauſ. Morb. Epiſt.* 1. and elſewhere; conſult the parts in the third index of that work under the head *cerebrum*. ** *Hiſt. Anatom.* †† Namely, thoſe of England, and the *Hiſt. et Mem. de l'Acad. des Scienc. de Paris*, the *Journal de Medecine* of Vandermonde, the *Giornale Medico di Venezia*, *Nouelle Letterar. del* Lami, *Avviſi ſulla ſalute umana del* Sig. Targioni, *Raccolta d'Opuſculi Medico Pratici, e Fiſico Medici* Dello Steſſo, *Giornale Medico di Firenze*, *Magazino Toſcano del* Sig. Manetti, *Comment. de Reb. in Med. et Scient. Natur. geſtis*, Lipſiæ.

20. With regard to the prognoſis, a few general remarks muſt be made. That pain which affects the head externally is leſs dangerous, and more eaſily cured, than that which is ſeated internally. For there is reaſon to apprehend that the latter may terminate in blindneſs, diſtenſion or rigor of the nerves, madneſs, phrenitis, epilepſy, loſs of memory, apoplexy, ſphacelus, abſceſs, and death. That which proceeds from exceſſive ſerum, or phlegm, although it is of long continuance, is generally attended with leſs danger, unleſs it injures the internal parts of the brain. It is unfavourable when it ſupervenes on acute fever, if it be conjoined with urine, which, from being thick and depoſiting a ſediment, has become thin and pellucid; and likewiſe when it ſuddenly occurs in people verging on old age, or after angina, or in conſequence of

the latter being too ſoon diſcuſſed *; as it affords a proof that the morbid matter is carried to the brain, and that phrenitis is threatened. For the patient runs the riſk of falling into lowneſs of ſpirits, if the pain, from being acute and violent, immediately grows milder, or ceaſes, without being preceded by any critical evacuation, or diminution of the diſeaſe in other reſpects, as it indicates the deſtruction of the ſentient faculty, and the commencement of gangrene.

* The author of the *Coacæ Prænotiones*, n. 372. *edit. Linden. pub. at* Leyden, 1665; which is the one I generally follow.

21. It is likewiſe a bad ſymptom when a perſon is affected with headach, to vomit frequently, particularly ruſt-coloured matter, and to be affected with deafneſs and watching *; but this muſt be underſtood of the idiopathic complaint. For in ſuch a caſe the vomiting is ſympathetic, and is occaſioned by the ſtomach and abdomen being drawn into conſent by the *par vagum nervorum*. When this happens the patients are quickly ſeized with raging madneſs. It is likewiſe a bad ſign when women, during the period of geſtation, are affected with headach, together with drowſineſs and heavineſs †, or are attacked with convulſions ‡; for it ſeems to ariſe from a congeſtion of blood in the brain. A headach occurring in acute fever, attended with other bad marks ‖, or with debility and rigor, or bloody urine §, or loſs of voice, and occaſional rigor, is

univerſally conſidered as being a moſt dangerous ſymptom ¶.

* *Prorrhet.* 1. † *Ibid.* ‡ *Coac.* n. 517. 534. ‖ *Coac.* n. 160. *Prænot.* n. 129. § *Coac.* n. 22. 28. ¶ *Ibid.* n. 255.

22. The author of the *Coacæ Prænotiones* * obſerves: "Thoſe perſons who, during the rigor, are very cold, and are affected with a pain in the head and neck, loſs of ſpeech, and thin ſweat, on recovering their ſtrength, and, as it were, recollecting themſelves, are carried off." The ſame author informs us, that it is a very bad ſymptom for a perſon who is affected with a pain in the head, together with a certain degree of deafneſs, trembling of the hands, pain in the back of the neck, and voids black, thick urine, to throw up green-coloured ſtuff. Laſtly, it is conſidered as being a fatal mark in the caſe of headach †, for the patient to obſerve certain appearances floating before the eyes, called *muſcæ volitantes*, to graſp the bed-cloaths, and pull down things which he conceives to be ſticking on the walls.

* *Coac.* n. 1. † *Prænot.* n. 17.

23. According to Hippocrates, "where a perſon labours under headach, and feels the pain all over, a diſcharge of pus, or water, or blood, from the noſe, or by the mouth, or from the ears, removes the diſeaſe *." This, however, muſt not be ſuppoſed to hold invariably. Sometimes ſo great is the injury done internally, that ſuch an evacuation proves inadequate to its removal;

as I have more than once had an opportunity of obſerving. The patient alſo receives relief from the burſting of ulcers, and ſometimes from fleep and a looſeneſs, or from the expectoration of a thick, inodorous matter †, together with thick urine, and a ſtrangury ‡, or abſceſſes in the inferior parts ‖. The convulſive pain of the head, and alſo the ſympathetic one proceeding from the ſtomach, uterus, and other parts, is generally of long continuance. Sometimes, however, although it frequently returns at intervals, in conſequence of ſleep, reſt, and abſtinence, it is allayed within twenty-four hours. Thoſe perſons who are ſubject to the ſpecies of the complaint called *hemicrania*, as they advance in life, in conſequence of their ſenſibility being diminiſhed, and the coherence of their ſolids increaſed, generally get greatly better. But the periodical *hemicraniæ*, particularly thoſe which return in the morning, as I have already ſaid, generally diſappear of their own accord, within eight or nine, or, at moſt, fourteen days.

* *Aphor.* 10. ſect. vi. *De Judicat.* n. 81. † *Coac.* n. 172. ‡ *Coac.* n. 170. *Prædict.* i. n. 152. ‖ *Prænot.* n. 129. *Coac.* n. 160.

THE CURE.

24. The cure muſt be adapted to the diverſity of the cauſes. When the complaint proceeds from plethora, or congeſtion, or from inflammation, or quickened febrile motion, it becomes ne-

ceſſary to draw blood liberally, and from a large wound, from the arms and feet, always keeping in view the patient's temperament, habit, age, ſex, and ſtrength. If this is not attended with relief, the frontal or jugular vein *, or the temporal artery itſelf, may be opened. In the caſe of an obſtinate diſeaſe, arteriotomy was recommended, both by Geſner † and Dolæus ‡, upwards of two hundred years ago, and the propriety of it has been ſince confirmed by the experience of the moderns. Likewiſe both wet and dry cupping-glaſſes are advantageouſly applied to the back, ſhoulder-blades, and neck, as well as to the occiput; or leeches may be applied to the temples, and behind the ears ‖, as well as to the hemorrhoidal tumours, eſpecially in hypochondriacal patients, or thoſe labouring under a diminution or ſuppreſſion of the hemorrhoidal or menſtrual evacuation. It is of the higheſt utility, however, to excite a flow of blood from the noſe, by fomentations, or the vapour of warm water, or by introducing into it a pen with a ſharp point, in order to make a wound in it; which is of particular ſervice if the headach proceeds from the ſuppreſſion of an epiſtaxis. After emptying the veſſels, it is proper to purge the belly repeatedly, by means of gentle medicines; and, as far as poſſible, to derive the blood from the head by warm ſemicupium, or emollient cataplaſms, or irritating ſinapiſms.

* It is not unuſual for ſurgeons, when they are deſired to open the jugular vein, to retard the return of the blood from the head, by tying a bandage round the neck, to produce a turgeſcence of the veins; but this proves injurious in diſeaſes of the head. Laying aſide the bandage, therefore, we ought to compreſs the jugular vein, by placing the hand a little above the clavicle, and drawing the head backwards; by which means the vein alone will ſwell, and become fit for opening, without the head ſuffering any injury.

† Tiſſot, *Epiſt. Varii Argument. de Cephalæa*, p. 185. *ed. Venet.* ‡ *Miſcellan. N. C. ann.* vi. obſ. 60. p. 90. || *Ibid.* obſ. 8. & 90.

25. When the headach proceeds from a collection of ſerum, or phlegm, it muſt be reſolved and evacuated. Bleeding in this caſe is inadmiſſible, unleſs, as ſometimes happens, it be conjoined with manifeſt plethora. But the blood ought to be drawn ſparingly and prudently, otherwiſe more danger than advantage may be the conſequence. Wet cupping-glaſſes, applied to the ſhoulder-blades, are attended with leſs difficulty, on account of their being more eaſily borne, and drawing off the ſerum, together with a ſmall quantity of blood, without injury. Cathartics, eſpecially hydragogues, occaſionally repeated, are more convenient. Of this kind are jalap, ſcammony, the neutral ſalts, having a bitteriſh taſte, as that employed in England, Modena, Carolina, &c. ſenna, agaricum, pills made of *hermodactylus*, and of the *ſuccinum* Cratonis, the *pilulæ tartareæ*,

or *hydropicæ*, of Bontius, rhubarb with manna, ſweet mercury, and the like. The following remedies poſſeſs an inciding and reſolving quality, while they cauſe a diſcharge of the ſuperabundant ſerum by the urinary paſſages, I mean gum ammoniac, the roots of the herb *arum*, ſquills, and aſellus, the ſuccinated liquor of hartſhorn, *terra foliata tartari*, and, laſtly, wine prepared with the aſhes of broom. With theſe may be occaſionally employed, infuſions of the cephalic plants, as ſage, betony, marjoram, roſe-mary, wild valerian root, piony, angelica, and ſo forth. If theſe fail of producing an effect, we muſt next have recourſe to the employment of diaphoretics, in the uſe of which it is generally neceſſary to perſiſt for a long time. The chief of theſe are, decoctions of the wood of guaiac, juniper, box-tree, miſletoe, ſaſſafras, ſarſaparilla-root, burdock, bark, rough bind-weed, and ſo on. Several eminent practitioners are ſaid to have employed the decoction of ſoap-wort with ſucceſs. Revulſion and evacuation are occaſioned by bliſters, ſetons, and iſſues, eſpecially when applied to the back of the neck *, friction, and ſimilar remedies, which have already been repeatedly mentioned. With reſpect to bliſters, when the diſeaſe proves obſtinate, after the general remedies and proper evacuations have been employed, modern practitioners adviſe applying them to the part affected, nay, to the whole head, previouſly ſhaved; par-

ticularly the phyſicians of England, who recommend them as being a remedy of the moſt efficacious kind, in diſcuſſing and evacuating the hurtful fluid, and affording wonderful relief to the pain. And this remedy is neither new nor unuſual among ourſelves, Louis Septali having long been in the habit of preſcribing them in ſimilar caſes †. But neither can all theſe remedies be employed, nor can they ſeverally be uſed indiſcriminately, nor in all patients without a prudent ſelection. The patient's nature, temperament, and habit, his age, the country, the cauſe and degree of violence of the diſeaſe, and many other circumſtances indicating or forbidding the uſe of particular remedies, muſt be carefully conſidered, in order that our judgement may be guided in the choice of the proper means to be employed; which certainly requires a judicious and experienced practitioner. Nor muſt we be ſatisfied merely with having employed theſe remedies; for, after removing the diſeaſe by means of them, the patient ſometimes remains ſo languid, and has ſuch a tendency to a bad ſtate of body, that his ſtrength requires being confirmed by the uſe of chalybeates and the peruvian bark.

* Carol. Piſo, *De Seros. Colluv.* ſect. 2. P. I. c. i. p. 42. 43. Van. Swiet. § 396. † *Animadv. et Caut. Med.* l. 6. p. 141. where theſe words are to be found, "But when the ſkin of the head is ſo thick as not to allow the free admiſſion of fluid,

and no ſenſible evacuation of humours occurs, I have very frequently found that it is better after ſhaving off the hair to apply a bliſter either to the part affected, or to the whole head; for the matter by this means being drawn outwards, is evacuated, particularly that part of it which is thinner, warm, and acrid: for, even when a pain of long continuance proceeds from thick matter, it can ſcarcely be very violent unleſs there be a mixture of ſome portion of that fluid.

26. When the pain proceeds from exceſſive eating or repletion, it is to be cured by abſtinence, purging, or vomiting. It is proper to employ cathartics, ſtomachics, and ſtimulants, if dyſpepſy has given riſe to the complaint. In this caſe Felici, a phyſician of conſiderable eminence in Picentia, propoſes likewiſe adminiſtering an emetic *. Baglivi † aſſerts, that the drinking of an infuſion of coffee is a remedy of the greateſt ſervice in removing headachs which come on in the afternoon in conſequence of indigeſtion. Langius ‡ cured two patients who laboured under an hemicrania from weakneſs of the ſtomach, by giving them, every morning before breakfaſt, for the ſpace of eight days, 12 grains of unpounded black pepper, and making them afterwards drink a large draught of cold water. I myſelf have more than once obſerved the moſt ſalutary effects to be produced in this diſeaſe by the drinking of medicated waters, particularly the acidulated chalybeate ones.

* *Diſſert.* 4. † *De Capit. Affect. in Acut. in eius. Prax.*
‡ *Miſcel. Veritat.* faſc. i. p. 68. 69.

27. When an hemicrania comes and goes every day at ſtated periods, it nearly reſembles, as I have already obſerved (2. 17.), a diſguiſed quotidian fever. It in fact appears to be what Ballonius names a *partial* and *topical fever*, becauſe the part affected is not only extremely painful, but likewiſe warm; and the temporal arteries throb with more violence and frequency, nearly in the ſame manner as takes place in fever. Nor is it a rare occurrence for the fit to commence with ſlight cold or ſhivering, although the arteries over the reſt of the body beat with tranquillity. After employing bleeding, and gentle and repeated purging, which very frequently cannot be avoided, if the paroxyſm does not go off ſpontaneouſly, it is very ſucceſsfully removed by the liberal employment of the peruvian bark. Frequently when prematurely given before the quantity of blood has been diminiſhed, and the *primæ viæ* cleanſed, it is attended with no benefit. Sometimes the hemicrania is ſo obſtinate, that it cannot be removed unleſs by opening the temporal artery *. Generally, however, after employing one or two bleedings, in plethoric people, and in thoſe labouring under an inflammatory diatheſis, it is ſufficient to open the jugular vein, the great utility of which, in this diſeaſe, has been celebrated, not only by the moſt ancient phyſicians, but alſo by thoſe in modern times, particularly by Richa of Turin †. The ſame

author affirms his having derived almoſt equal advantage from the application of leeches to the temples.

* Proſp. Alpin. *Medic. Ægypt.* l. 2. c. 12. *et* Ludwig, *Com. de Reb. in ſcient. Natur. et Med. geſt.* vol. iii. p. 535. † *Conſtit. Taurin. alter.* p. 79.

28. Aperients, emmenagogues, and anti-hyſterical means are neceſſary in the caſe of the pain which depends upon obſtructions in the veſſels of the abdominal viſcera and uterus, or upon hyſteria, or hypochondriaſis originating from a ſimilar cauſe. But it muſt be oppoſed by means of anthelminthics, as ſhall hereafter be ſhewn, if lumbrici and other ſpecies of worms in the inteſtines ſeem to occaſion it. When ſpaſms and exceſſive ſenſibility diſtreſs the patient, ſtimulants and anodynes, as the different compoſitions of opium, muſt be employed. Hence the remedies recommended are the *pilulæ hyſtericæ*, the *diaſcordium Fracaſtorii*, the *theriaca Andromachi*, the *philonium Romanum*, the *mithridatium Damocratis*, the *laudanum nepenthes Quercetani*, the *laudanum liquidum* of Sydenham, the *extractum opii gummoſum* of Baumè, caſtor, muſk, camphor, the volatile ſalt, ſpirit and oil of amber, and ſo forth. Baglivi propoſes the powder of the *gutteta* of Riverius, to the extent of a drachm, with a decoction of primroſe, which, however, judicious phyſicians of the preſent day would wiſh to be freed of many trivial and

uſeleſs ingredients, leſt, on account of them, it ſhould be rejected as wholly void of any medical virtue. On the whole, patients of a delicate conſtitution, and endowed with ſenſibility, agree beſt with temperate remedies; and if they be of a rigid and dry fibre, the tepid bath, and copious drinking of the pureſt water, are well calculated for them. On the other hand, if there be too great laxity of the fibres, as happens in people of a phlegmatic temperament, or cachectic habit, in the caſe of paralyſis, drowſineſs, impaired memory, or ſenſe, thoſe remedies are better adapted to them which poſſeſs a gently aromatic quality, are ſlightly ſtimulant and ſtrengthening, or even rubefacients and bliſters †.

* *De Dolore Capitis in genere.* † Hoffman. *Med. Syſt.* T. 3. ſect. 1. c. v. § 45.

29. The thin, acrid, ſerous fluid, which the ancients named ſalt, or bilious (13.), if it be collected in any part, occaſioning a *warm pain* (3.), requires decoctions of the cooling herbs, whey, and milk; nor ought we to be deterred in this caſe from the employment of milk, by the authority of Hippocrates, when he affirms that it proves injurious to people labouring under headach; for this aſſertion, I imagine, is to be underſtood only of the pain in the head occaſioned by imperfect digeſtion, and an acid in the ſtomach. I am likewiſe of opinion that this method of cure

ought to be adopted in the ſpecies of pain to which perſons endowed with extreme ſenſibility, and affected with derangement of the nervous ſyſtem from any ſlight cauſe, are liable. Nor muſt we then lay aſide opium *, the *laudanum liquidum* of Sydenham, the *ſyrupus de meconio* of the ſame, and the other remedies already enumerated (28.). But if the remedies containing opium, and poſſeſſing a narcotic quality, be not borne well, as ſometimes happens †, or the other remedies propoſed there do not turn out well, in their room we may ſafely ſubſtitute the *liquor anodynus mineralis* of Hoffman, vitriolic ether, the *ſpiritus antepilepticus* of Pezoldt, emulſions of the greater cold ſeeds, and white poppy, water diſtilled from the flowers of violets and wild poppy, or green nuts rediſtilled, which are endowed with a remarkably anodyne and ſedative quality.

* When there is great reaſon to ſuſpect the preſence of *too acute ſenſation*, giving riſe to a headach from any ſlight cauſe, which, on account of that acuteneſs of ſenſation, becomes exceſſive, Ballonius adviſes our having recourſe to narcotics. Epid. 2. *et* conſil 1. & 43. lib. 3. *ex* Boneti *recenſione*.

† We very frequently fall in with women or men, in whom, from a peculiar idioſyncraſy, opium, inſtead of occaſioning reſt and ſleep, excites anxiety, heat, giddineſs, fluſhed face, nauſea, and watching. For ſuch perſons, therefore, we ought rather to preſcribe anodynes, of which kind are the remedies of which I have already made mention. I know a nun to whom two or three grains of muſk were given with advantage, and likewiſe another woman, who enjoyed no ſleep, un-

leſs ſhe every night took a ſmall ſpoonful of Pezoldt's *antepileptic ſpirit* in a draught of cold water.

30. With regard to the remedies which afford relief when the pain is a ſymptom of other diſeaſes (3.), it is not neceſſary to ſpeak, as, on overcoming theſe by the proper means, it likewiſe is removed. But for curing the headach which is occaſioned by lues venerea, the diaphoretic decoctions of the woods are univerſally recommended. To which, if crude antimony be added, they are ſuppoſed to be rendered more active. Malpighi, as I have learnt from Beccaria, ſet ſuch value upon the decoction commonly called the *decoctum ex lignis*, and that made from the ſhells of nuts, that he uſed to aſſert, that the moſt obſtinate caſes of ſyphilis, which had defied the power of mercury, frequently yielded to it *. It muſt not be ſuppoſed, however, that this remedy is uniformly productive of its ſalutary effects. For it is ſometimes employed to no purpoſe; in which caſe, if ſymptoms which render the preſence of ſyphilis ſuſpected be obſerved, it is the practitioner's buſineſs with all diſpatch to haſten to the employment of mercury, as being the moſt efficacious remedy which can be uſed.

* The decoctum antivenereum of Malpighi.

Rec.—Antimon. crud. contuſ. et nodulo incluſ. unc. iv. Rad. ſarſæpar. elect. et inciſ. unc. iij. Putam. nuc. virid. unc. iij.

M. Infund. per h. xxiv. in aq. font. lib. viij. ſuper ciner. calidos. Deind. decoq. ad tert. part. conſumt. Col. et colat. unc. viij. dentur ter in die per dies xx. aut xxx. non omiſſo decocto ſecundario pro potu ordinario.

31. If the preſence of worms in the nares, frontal ſinuſes, or other ſubcutaneous parts, be ſuſpected, they muſt be diſplaced by means of the vapour of warm water, and errhines, or deſtroyed by the fumes of tobacco and burnt powder of camphor. Camerari, on the authority of Littri, makes mention of a worm having been expelled by the employment of ſnuff*. With this view Vogel † recommends to the patient, inhaling by the noſtrils and mouth the ſmoke ariſing from the leaves of wormwood, horehound, betony, and leſſer centaury, of each two drachms, angelica-root, zedoary, and amber, of each one drachm, and half an ounce of crude antimony, beat up together, well mixed, and ſprinkled upon burning coals.

* *Diſſert. Epiſt.* xii. † *De Cogn. et Curand. Morb.* § 420.

32. Beſides, I muſt not omit here mentioning the proper remedies applied externally for alleviating the pain. Roſe-water, or that of elder-flowers, and vinegar applied to the fore-head, whether tepid or cold, allay, diſcuſs, and repreſs the pain, and in a certain meaſure check the motion of the blood. When the pain is of the convulſive and ſpaſmodic kind, the temples are very properly anointed with the *unguentum populneum*,

or ſome opium, with a little camphor and ſaffron diſſolved in Hungary water; or they may be rubbed with vitriolic æther, which allays the pain and diminiſhes the heat. The juice of vervain, or the herb itſelf pounded, and applied to the part where the pain is felt, is ſuppoſed to be ſerviceable in the caſe of every pain in the head, as if it poſſeſſed a *ſpecific* property. Some likewiſe adviſe the introducing into the noſtrils ſome anodyne tincture, or the *balſamum vitæ* of Hoffman *, or camphorated ſpirits of wine. For they conſider it as reaſonable to ſuppoſe, that in conſequence of being immediately applied to the olfactory nerves, the others alſo are made to feel the efficacy of the medicine. In general the part affected may be moſt advantageouſly fomented with warm water, or tepid milk, or warm coals wrapt up in a cloth. In the periodical *hemicraniæ*, a few hours before the acceſſion of the pain, I am in the habit of applying to the temples and frontal ſinus, theriac, with gum galbanum and camphor, beat up with a certain quantity of vinegar. For it proves reſolving, diſcuſſing, and blunts ſenſation, in conſequence of which a milder paroxyſm frequently ſucceeds.

* The balſamum vitæ of Hoffman.

Rec.—Ol. deſtillat. Lavendul.
Majoran.
Caryophil.
Macis.
Cinnamom. an. ſcrup. j.

Rutæ.
Succin. alb. an. ſcrup. ſem.
Citri e cort. expreſſ. ſcrup. j.
Ambr. gryſeæ ſcrup. ſem.

Olea cum ambra, et balſami peruviani ſcrupulo uno miſceantur, atque in ſpiritus vini rectificatiſſimi unciis decem ſolvantur. Intern. datur a gutt. x. ad xx. ad nauſeam, ad colicam, ad diarrhœam. Extrinſicus ad roborandas, firmandaſque partes.

33. I cannot here paſs over in ſilence a ſingular and bold method of treatment once adopted by the celebrated Tiſſot in the caſe of a moſt violent and long-continued *cæphalæa*, with which an unmarried woman of thirty years of age, otherwiſe ſound and vigorous, as country-people generally are, was diſtreſſed *. The ſeat of the greateſt pain was the *internal poſterior angle of the right parietal bone*, and it was confined to the *ſpace of a ſixpence*. But the *whole forehead* was affected by conſent. Veneſection, arteriotomy, warm ſemicupium, immerſion of the whole body in cold water, letting cold water fall by drops on the head, opium, and ſetons, had been tried without effect. She had only received ſome temporary relief from wet cupping-glaſſes being applied to the part affected; and ſomewhat more laſting benefit from a copious ſuppuration excited by cantharides applied to the head. He conjectured that the pain was externally ſituate, and as he thought that no part below the ſkin and muſcles could be affected with it, he cauſed

a crucial inciſion to be made in the part affected, extending all the way to the face, that by dividing the nerves of the ſkin or muſcles the feeling might be deſtroyed. From the moment of performing the inciſion the pain diſappeared, and, after a ſuppuration of conſiderable continuance, even that which affected the forehead gradually ceaſed †. But nobody who does not poſſeſs the ſame ſound judgment and intimate knowledge of anatomy, would preſume to have recourſe to ſuch an experiment. Probably by employing the decoction of the woods, as it is called, internally, and the cautious rubbing in of mercury, externally, the cauſe of the pain in ſuch a caſe might be removed, without adopting ſo harſh and doubtful a method of treatment. Frequently the obſtinacy of the pain, and the nature of the part affected, as well as the moſt careful conſideration of all the circumſtances, even when there was no reaſon to ſuſpect the preſence of a venereal taint, have led phyſicians to employ this ſimple and efficacious treatment with ſucceſs.

* *Epiſt. Var. Arg.* p. 185. *Edit. Venet.*

† A caſe which occurred to Gavaſetti (*De Cauter.* c. 3.) is in point here. A conſtant ſympathetic headach aroſe in conſequence of a perſon's thumb having been bruiſed. It diſappeared, however, on the thumb being cauteriſed. Vid. Haller's *Elem. Phyſ.* T. 4. lib. x. ſect. vii. § xxiii.

34. I ſhall add, in the laſt place, that in

every caſe of headach the moſt ancient phyſicians in general conſidered it as neceſſary to abſtain from meat, to drink water, and ſhave the head. But in the caſe of one occaſioned by a warm cauſe, they adviſed bathing the head with abundance of cold water, or employing vinegar of roſes. If it proceeded from cold, or if a tenacious and thick humour required being diſſolved, they recommended fomenting or chafing the head with warm water, or letting it fall by drops upon the part, and afterwards anointing it with warm oil, and covering it with cloths; at the ſame time bathing the feet, and employing remedies to clear the noſe, exciting a flow of ſaliva by the proper means, purging the belly, and, by means of muſtard, cantharides, or red-hot iron, exciting ulcers, to afford an outlet to the diſeaſe *. Experience alſo has ſhewn, that in the caſe of a long-continued and confirmed headach, it is ſometimes allowable to employ the cold bath, and that it is attended with ſervice, after the head has been ſhaved, to ſuffer the hair to grow, and to comb it frequently; by which means I once obſerved a nobleman in the prime of life, and of a phlegmatic and corpulent habit, cured of a cephalæa with which he had been conſtantly afflicted. It is moreover of great conſequence in the treatment of headachs to cover the feet, and raiſe the head; which remark it is likewiſe very neceſſary to keep in view,

to prevent the coming on of the complaint, particularly in perſons devoted to the ſtudy of literature.

* Vid. Celſ. l. iv. c. 2. n. 5. *ad* 160.

CHAPTER II.

OF HYDROCEPHALUS AND SPINA BIFIDA;

OR,

THE WATERY SWELLING OF THE SPINE.

35. THE next diſeaſe to be conſidered is *hydrocephalus*, becauſe it is frequently conjoined with headach, or proceeds from ſimilar cauſes. This name was formerly given to that diſeaſe in which the head becomes turgid with a watery fluid, ſwells, and eaſily yields to the preſſure of the finger. But under it are now comprehended ſeveral complaints which differ both in their ſeat and effects, in which there is ſometimes no external ſwelling. It is a mark, however, in common to them all, to ariſe from ſome collection of water, or lymph, which is found effuſed either between the ſkin and pericranium, or between the pericranium and ſkull, or within the cavity of the cranium itſelf. The laſt happens in two ways, either in conſequence of the bones of the cranium being too widely ſeparated, which moſt commonly happens to the fœtus, or in infancy;

or, in consequence of them not being separated at all, which is a fault chiefly incident to mature age; although I do not deny that sometimes there are instances of grown up people, and those advanced in life, the bones of whose cranium have become separated by disease. We are informed by Ramazzini and Hamberger, eminent medical professors, that this has happened to people labouring under long-continued and violent headach.

36. The first distinction of hydrocephalus, therefore, is into *external* and *internal*. In the external species, if the fluid is collected in the first situation (35.), Platner affirms that the swelling proceeds to an enormous extent, exhibiting through the skin a pellucid fluid, as if contained in a glass or horn. If it is collected in the second situation, which is of less frequent occurrence, the head does not swell to such a degree, but when pressed becomes elastic like a distended bladder *.

* *Instit. Chir.* § 745.

37. There are two kinds of internal hydrocephalus, as I have already observed (35.), of which the one may be said to be composed of the internal and external kind, because in it the water fills and distends the internal parts of the brain in such a manner as even to push the bones of the cranium outwards, and cause a separation of the sutures, and at length escaping through them, betrays it-

ſelf by an enormous ſwelling of the head: and this ſeems principally to have happened in fœtuſes which have been obſerved by diſſecters to want the brain altogether: I ſay have been *obſerved* only, for Morgagni is of opinion that they did not really want the brain originally, but rather that it had become gradually ſo macerated and diſſolved, as at length to eſcape through ſome hole, as that of the occiput or ſpine,—which in fact appears much more probable.

38. But the other ſpecies of the complaint, as it takes place without the ſeparation of the bones of the cranium, and does not betray itſelf by any external tumour or ſwelling, has not univerſally obtained the name of hydrocephalus. For ſome authors ſuppoſe, that when the head is not ſwelled, hydrocephalus cannot take place. Moſt writers, however, among whom Morgagni holds the principal rank, are of opinion that the ſame name, without doubt, applies to this ſpecies of the complaint alſo *. For, when a great collection of water gradually takes place within the cranium, increaſing more and more daily, if the bones yielded to it, as happens in infants, it is perfectly obvious that the ſwelling of the head would appear alſo externally; becauſe moſt of the cauſes giving riſe to a collection of water in the cranium of young infants, exiſt in grown up people, and cauſe the ſame accumulation †. But this ſpecies of internal hydrocephalus may be

diſtinguiſhed into acute and chronic. By the firſt term I ſhould diſtinguiſh that diſeaſe, which has a rapid tendency to death, and is accompanied with conſiderable fever: by the laſt that which proceeds to a fatal termination by ſlow degrees, and is unaccompanied with fever, or at leaſt attended with a very ſlight one.

* *De Cauſ. et Sedib. Morb. &c.* epiſt. xii. n. 3.

† Zwinger, who has collected a number of caſes of the complaint, and carefully compared them, deſerves to be conſulted by the ſtudent. Vid. *Act. Helvet.* vol. i. c. 1.

39. It appears, therefore, that the proximate cauſe of hydrocephalus is a gradual accumulation of watery fluid filling either the external or internal parts of the head, or both together. The remote cauſes appear to be the following: an obſtruction of the veins which return both the blood and lymph from the head and brain; compreſſion ſuſtained during parturition by the mouth of the uterus, or by the umbilical cord twiſted round the neck; loſs of tone of the abſorbents; polypi; glandular tumours about the neck; the rupture of the lymphatic veſſels; contuſions; a bad habit of body; vitiated fluids; a ſerous colluvies and univerſal laxity and atony; ſcalded head, tinia, and ſcabies, being forced in; the ſuppreſſion of the ſecretion of urine and ſweat, and ſo forth.

40. An effuſion and congeſtion of ſerum in

the ventricles of the brain, particularly the anterior ones, conſtitutes *hydrocephalus interuus*. I have already ſhewn that a collection of it between the dura and pia mater, or between them and the brain, ſeems rather to induce comatoſe affections than actual hydrocephalus. But ſeveral particular cauſes, which I ſhall ſhortly enumerate, may contribute to the production of ſuch a congeſtion. Perhaps the moſt frequent and chief of them is, the burſting of hydatids, generated in the choroid plexus, or elſewhere within the brain

41. Likewiſe morbid conditions both of the *infundibulum* and *pituitary gland* are conſidered by Morgagni as capable of producing it. For although Vieuſſen, Ridley, and Lieutaud deny that the *infundibulum* is hollow, he ſtill adheres to the opinion of the ancients, and holds it as a certain fact, that the ſerum of the ventricles is carried down the infundibulum to the pituitary gland, where it is abſorbed. But as no certain concluſion, with regard to the infundibulum being hollow, can be drawn from experiments and injections *, on account of the very delicate texture of the part, and, according to Sabatier †, one of the ableſt anatomiſts, as we are ſtill ignorant of the true ſtructure and nature of the pituitary gland, why might not Morgagni, whoſe intimate knowledge of anatomy has not been ſurpaſſed, be allowed to entertain his own opinion on the ſubject?

* Murray, Profeſſor of Anatomy at Upſal, lately contended

that the infundibulum was hollow, becauſe in the brains of men who had been frozen to death, he had diſcovered congealed watery fluid penetrating into the infundibulum. Others likewiſe have obſerved in it a portion of blood which had fallen from the ventricles. But the aſſertion of Murray is contradicted by the repeated experiments of Girard, Profeſſor of Anatomy in the college of Parma, who was never able to diſcover in the infundibulum water congealed with cold. Nor is it rational to conclude, on account of blood having been found in the infundibulum, that it is naturally hollow; becauſe the force, impulſe, and gravity of extravaſated blood may be ſo great, as to make new room for itſelf in the very ſoft parts of the body, as I myſelf have frequently found, and experience has ſhewn, to happen in the other medullary parts of the brain, where no cavity exiſts naturally. Add to this, that Girard's obſervations are confirmed by the very accurate reſearches lately publiſhed by Vincenti Malacarn, diſtinguiſhed for his minute knowledge of the ſtructure of the brain. On repeating the experiments of Murray, he was not able to diſcover any cavity in the infundibulum. It will be better, therefore, to leave this queſtion to the deciſion of time. But let us grant that the infundibulum is not hollow. Still it appears, from the experiments of Malacarn (*Delle Oſſervazione in Chirurg.* Part 2. p. 45.), that the infundibulum and pituitary gland are very amply provided with lymphatics, ſo that he does not heſitate to refer the latter to the claſs of lymphatic glands. Hence it follows, that the lymph is conveyed from the ventricles of the brain by the lymphatics to the infundibulum and pituitary gland, and thence to the common receptacle. If the reflux of the lymph be ſuppoſed to be impeded, either by the obſtruction of the cavity of the infundibulum (granting it to be hollow), or from the infarction or compreſſion of the lymphatics, will not the infundibulum and pituitary gland be found to ſerve the ſame purpoſe?

† *Traité Complét. d'Anat.* T. 1. p. 498.

42. Let us, therefore, grant that the hypotheſis

of Morgagni and the ancients, concerning the office of the infundibulum and pituitary gland, is true. It will readily appear that the morbid conditions of each, which may give rise to hydrocephalus, do not differ greatly from one another. And with regard to the pituitary gland, he observes, we must consider the peculiar condition of this gland, by which either the admission or transmission of water is prevented; namely, its being defective, as sometimes happens; its being obstructed; its having become scirrhous; its being destroyed, and consumed; or the water itself having acquired such spissitude and density as to be incapable of passing through the gland; or, after having entered into it, its not getting out again, or its possessing such acrimony as to irritate the extreme tubes of the infundibulum, and probably obstruct them by inducing spasm: which, however, is a fact that will not be readily granted by those who have ascertained by experiments that the nervous and medullary fibre is destitute of irritability, or the property of contracting itself on the application of a stimulus. Besides, the obstruction of the infundibulum itself, or the union of the fornix with the base of the lateral ventricles, or very violent compression, will likewise prevent the free passage of water from the ventricles to the pituitary gland.

43. But, as Morgagni observes, it does not

always happen, although the pituitary gland be found in a morbid ſtate, that a great collection of water takes place in the ventricles of the brain: and, on the other hand, although it remain perfectly ſound, they have ſometimes been found quite full of water. We muſt, therefore, as he concludes, ſuppoſe the exiſtence of other paſſages by which the ſerum, which is found in the ventricles, is abſorbed. If theſe become obſtructed, or from any other cauſe cannot perform their office, an accumulation of ſerum will take place, although the pituitary gland be in a ſound ſtate. But if they remain open, and nothing be wanting to the due performance of their action, although the gland has become injured, after all ſuch an accumulation of ſerum as is adequate to the production of hydrocephalus will not happen. It is highly probable, then, that this affection occurs when the ſerum is diſcharged more abundantly into the ventricles by the exhalant arteries, orinorganic pores, than it is received by the pituitary gland and other paſſages, namely, the abſorbing lymphatic veins †.

* *De Sed. et Cauſ. Morb.* Ep. iv. n. 36. † *Id. ib.* Ep. xii. n. 3.

44. Sometimes another diſeaſe ſupervenes upon hydrocephalus internus, I mean the watery ſwelling of the ſpine, named by us *ſpina biſida.* It ariſes in the vertebræ, and ſeems to be formed by the ſwelling of the ſpinal marrow. Every

part of the ſpine is liable to this diſeaſe, but more particularly the inferior lumbar vertebræ, and the top of the *os ſacrum*. Snip and Swagerman, as we learn from Portali *, have obſerved ſimilar tumours upon the neck, as large as a perſon's head, unaccompanied with any paralyſis, either of the ſuperior or inferior parts of the body †.

* *Mém. de l'Acad. Roy. des Scienc. de Paris, an.* 1770, 1771, p. 36. † Drawings of ſuch ſwellings may be ſeen in Ruyſch. Annot. 34. fig. 36.

45. Theſe tumours are prominent, of the natural colour, ſoft to the touch, more or leſs diſtended, according to the patient's poſture, full of water, and, on looking through them with a candle, they appear diaphanous, becauſe the water collected in them is generally limpid. When preſſed with the points of the fingers, they are found to be divided in the middle. According to Platner's * explanation of their origin, when an accumulation of water takes place in the anterior ventricles of the brain, it gradually deſcends by the aqueduct of Sylvius into the third ventricle, from whence, if there be no outlet into the infundibulum, it proceeds through the greater valve of the brain into the fourth, thence opening for itſelf a paſſage into the tube of the ſpine. This very frequently happens in parturition, du-

ring which the head is ſometimes very violently compreſſed by the mouth of the uterus.

* *Inſtit. Chirurg.* § 748.

46. A collection may be formed in the ſpine, not only of the water which deſcends from the internal parts of the cranium, but likewiſe of that which is ſecreted within the ſpine *. Hence ſometimes a dropſy of both concurs, ſometimes of one only, or *hydrorachitis* is obſerved, both in fœtuſes and infants, and alſo in boys and grown-up people, but much more frequently in the former, their vertebræ, like the bones of their head, being of ſuch a nature as to be very apt to yield, and ſometimes actually giving way.

* Portali, in conſequence of the obſervations he had made, contends that the ſeat of the water collected in the *ſpina biſida* is in the canal which runs all along the ſpinal marrow, and which was formerly deſcribed by Columbo and Carol. Stephani, although of late it has been almoſt forgot, or at leaſt much neglected; and he is of opinion that this canal was formed by nature to admit of the alternate intumeſcence and depreſſion of the ſpinal marrow, in the ſame manner as happens in the brain. *Mém. de l'Acad. Roy. de Scienc. de Paris de l'an.* 1770 & 1771.

47. In conſequence, therefore, of a greater or leſſer number of the vertebræ opening, and water preſſing upon the integuments of the ſpinal marrow, there ariſes in the back-part of the ſpine a tumour, ſometimes greater, ſometimes ſmaller, ſoft, particularly in the middle, watery, generally pellucid, like an hydatid, ſometimes ſemi-opaque,

in appearance not unlike hydrocephalus, as I have already remarked *. According to Morgagni †, by whoſe authority I am generally diſpoſed to be guided, " they open chiefly where the ſpinal proceſſes afterwards ariſe, not only, as is believed, becauſe the bones are then disjoined,—for they are likewiſe ſeparated on each ſide, where they are connected with the bodies of the vertebræ,—but likewiſe, as he ſuppoſes, becauſe the reſiſtance of the incumbent muſcles and tendons is much leſs there than at the ſides of the ſpine." For in the fœtus, the part of the canal of the ſpine, where the bones of the vertebræ unite poſteriorly, is extremely delicate, as it is ſcarcely covered with any thing but the common integuments, and is not oſſeous, but cartilaginous, and the finer and ſofter the younger the fœtus is.

* The ſize of the *ſpina biſida*, as I have already noticed, is various. But in the fœtus, or immediately after birth, it is ſaid to be ſometimes about the ſize of a walnut, ſometimes as big as a common turnip. † L. c. Ep. xii. n. 9.

48. Some authors, however, derive the *ſpina biſida* from compreſſion of the lateral part of the ſpinal marrow, where the nerves paſs out; on account of having at times obſerved it accompanied with paralyſis of the limbs. But they appear to be miſtaken, as in general paralyſis, at leaſt the genuine complaint, is not preſent, or only ſupervenes late in the diſeaſe. Beſides, Swa-

german * obſerves, that it takes place only after birth, in conſequence of ſome prediſpoſing cauſe. Others, again, as Heverman †, refer the cauſe both of *hydrocephalus* and *ſpina biſida* to an improper poſition of the fœtus in the uterus, alleging, with a ſhew of truth, that in conſequence of the back and loins being bent too much forward, the vertebræ are drawn aſunder, and become protuberant.

* *De Hydrocephalo et Spina Biſida, Amſtelod.* 1767. † *Vermiſchte Bemerkungen und Unterſuchungen, &c.* p. 304. Vid. Ludwig. *Comment. de Reb. &c.* vol. xv. p. 309.

49. I have already obſerved (44.) that the ſuperior part of the *os ſacrum* is ſometimes affected with theſe ſwellings. But becauſe the inferior and external part of it, which, according to Ruyſch, is naturally ſomewhat open, is nevertheleſs not more frequently liable to them, Morgagni, inquiring into the cauſe of this, thinks that it proceeds from the tube of the thicker membrane, deſtined for containing the cauda equina with a certain quantity of water, not being extended to the lower part, where it opens; but that it ſometimes happens, that by the force of the morbid collection of water it is preſſed downwards, and at length, being lengthened to that part, becomes prominent, cauſing the external ſwelling *.

* Concerning theſe tumours, the reader may conſult a diſſertation entitled, " *Diſſertatio* Frid. Orthii *de quibuſdam Tumor.*

tunic. externis ſub præſidio Jo. Salzmanni *habita ;* and the *Programma* of Platner, *Morb. Nov. ann.* 1754, together with the obſervations of Trew on this ſubject, publiſhed in the *Commerc. Litterar. ann.* 1741. hebdomad. 20. & 21.

THE DIAGNOSIS.

50. THE marks of hydrocephalus externus have already been pointed out (35. 36.). But the firſt ſpecies of the internal complaint (37.) is diſtinguiſhed by a ſwelling of the head, which is accompanied with ſome hardneſs, by the fore-head becoming prominent, by the ſutures being too looſely connected *, and by the eyes becoming fierce, prominent, and moiſt. It is likewiſe indicated, if tumours ariſe upon the ſoft ſutures of the bones of the head, particularly from that which connects the occipital and parietal bones, and ſeem at length to hang down from the head †.

* Sometimes, although the ſutures in young infants, at the beginning of the diſeaſe, be ſeparated, and the bones of the ſkull be looſely connected, as the children advance in life they become ſo united, that nothing but the largeneſs of the head is diſcernible. Inſtances of this kind are related in Ekmark's diſſertation upon *Hydrocephalus Internus, pub. ann.* 1745, which I ſhall quote below.

† Platner. l. c. § 746. Vid. Ruyſch. *Obſerv. Anatom. Chir.* obſ. lii. p. 69. fig. 45. *et* M. Aurel. Severin. *De Abſceſſ. Noviſſ. Obſervat.* c. ix.

51. It is more difficult to recogniſe the other ſpecies of the internal complaint (38.), as it be-

trays itſelf by no internal marks. According to Petit, however *, the following ſymptoms moſt frequently occur in it: It is generally preceded in children by difficult or painful dentition, worms, morbid ſtates of the lymph, obſtructions, ſpaſms, and convulſions. Nor do the ſymptoms occurring in adults affected with internal hydrocephalus differ greatly from theſe. The ſubjects of the complaint are frequently attacked with ſlight ſpaſmodic affections of the mouth, lips, and eye-lids; they gnaſh their teeth, bite their lips, and pick their noſe, like children troubled with worms; they become pale, melancholy, and languid; their belly is ſometimes open, ſometimes bound; their eyes are livid, and the pupil dilated, or they are affected with what they call *mydriaſis*. But if the patients become dull and drowſy, if they loſe their memory, and impaired ſenſation, together with heavineſs, be ſuperadded to theſe ſymptoms, we are not only enabled to conclude with more certainty that hydrocephalus internus is preſent, but we may even predict that death will ſhortly take place.

* *Mém. de l'Acad. Roy.* 1718. p. 121. Van Swieten made ſimilar obſervations, § MCCXVIII.

52. I muſt not here omit adducing the obſervations of Fothergill *. In conſequence of repeated experience, in the courſe of a long practice, he confidently affirms, that internal hydrocephalus ſeldom takes place before the third year of one's age, generally within the fifth and tenth,

and very ſeldom later †. He obſerves alſo, that at that time of life it frequently deceives us, under the appearance of teething or worms, as I have already mentioned on the authority of Petit (51.), until the ſymptoms increaſe to ſuch a height as to render the complaint irremediable. The ſymptoms, however, which denote its preſence, according to him, are, particularly headach, pains in the legs, tranſient and diſturbed ſlumbers, irregular pulſe, and the eye-lids being ſo widely ſeparated as to diſcover great part of the *albuginea*. The experience which I myſelf have had, in the treatment of this diſeaſe, confirms the truth of theſe obſervations, as I have remarked very ſimilar circumſtances occurring, and, in particular, when the diſeaſe has arrived at its height, I have obſerved the moſt excruciating headachs, ſometimes univerſally diffuſed, ſometimes confined to a part, in the ſame manner as an hemicrania; coma vigil; perpetual complaining; trembling of the limbs; mental emotion; and, what I would wiſh particularly to be kept in view, *aphonia* occaſionally recurring: the pulſe ſometimes ſlow and great, ſometimes quick and ſmall, and extremely variable; ſometimes alſo frequent and febrile ‡.

* *Medical Obſervations and Inquiries by a Society of Phyſicians in London*, vol. iv. p. 40. Vid. *excerpt. in Comment. de Reb. in Scient. Natural. et Med. geſt.* vol. xviii. p. 390. 392.

† In a diſſertation of Ekmark's, publicly diſcuſſed at Upſal,

on the 1ſt of June 1763, is to be found a rare inſtance of chronic hydrocephalus internus, accompanied with the account of the diſſection of the body, which began to betray itſelf in a woman when ſhe was only ſix months old, and continued until the forty-fifth year of her age. It is to be found in Sandifort's *Theſaurus Diſſertationum*, vol. ii. p. 325.

‡ It may be ſerviceable in this place to relate the hiſtory, although it is ſhort, and by no means perfect, of an internal acute hydrocephalus, that I may diſtinguiſh it from the ſlow and chronic one, as I received it from the perſon who treated the patient, accompanying it with an account of the diſſection. A girl with a large head, about four years of age, of the ſanguine temperament, and a good habit of body, but who had formerly been ſeveral times attacked with a rheumatic cough, began to complain occaſionally of a pain in the head. One day ſhe was ſuddenly affected with cold and ſhivering, which were ſucceeded by heat and conſiderable fever. She was purged by means of an antiphlogiſtic cathartic; but as the fever ſtill continued, ſhe was afterwards bled. The fever continuing irregularly, frequently increaſed, and again remitted without attaining an apyrexia. After the bleeding ſhe became better, inſomuch that the fever not only ſeemed gradually to diſappear, but ſhe was unable to get out of bed, and had a deſire for meat, of which ſhe took a larger quantity for ſeveral days. The headach, however, never altogether left her, nor did the pulſe at all return to its natural ſtate, being irregular and quick. At length, four days before her death, ſhe had another attack of the fever, attended with ſuch an aggravation of the headach, that ſhe firſt became delirious, and was next attacked with occaſional convulſive motions of the face, and, laſtly, of the limbs. At length one ſide of the body becoming paralytic, ſhe continued upwards of twenty-four hours ſnoring and deprived of ſenſe, till at length, after antiſpaſmodic, antiphlogiſtic, and revellent means had been employed to no purpoſe, ſhe expired on the ſeventeenth day from the commencement of the diſeaſe, and on the fourth after the recurrence of the fe-

ver and headach. Her body was diſſected in proper time. Kavina, one of the chief military ſurgeons, and a particular friend of the family, preſided on the occaſion, and tranſmitted the account of it to me in writing. On opening the ſkull, the *dura mater* appeared thick, and of a bluiſh colour, as it is generally found to be in infancy, on account of the ſize of the brain, and the darkneſs of the veſſels lying underneath appearing thro' it. Its blood-veſſels, as well as thoſe of the pia mater and brain itſelf, were very turgid and full of blood, and particularly all the venous ſinuſes, which were filled with an unuſual quantity of it. Upon folding back the membranes, the external ſurface of the left anterior lobe of the brain was found covered with a fine, concrete, clear, yellow fluid, like jelly. The ventricles were tinged with a great quantity of water. Such were the appearances which took place in the head. The thorax was next opened. In the fore-part of the right lobe of the lungs a tubercle was found, from which, after opening it, on preſſure, nearly two drachms of lymphatic fluid paſſed out. Above the ſame part of the lungs a concretion of yellow, gelatinous, mucous fluid had taken place. In the left ſide two tubercles were found, which, on being preſſed, poured out fetid pus. Externally its ſurface was marked with a violet-coloured blackiſh ſpot. The pulmonary veſſels contained ſcarcely any blood. In the right auricle of the heart there was a great polypus, which cauſed a conſiderable ſwelling of it. The abdomen was not diſſected. So far his account goes.

53. No author ſeems to have deſcribed this diſeaſe more accurately than Hippocrates. His words are: "If a collection of water takes place in the brain, an acute pain in the ſinciput and at the temples, ſometimes in other parts, takes place. At other times there is rigor and fever, attended with pain in the region of the eyes, and blindneſs, the pupil is divided, the patient ſees

double, and, on riſing, is ſeized with vertigo, and cannot bear the appulſe of the wind, nor the light of the ſun; his ears tingle, and noiſe is offenſive to him; he ſpits out the ſaliva and phlegm, and ſometimes alſo rejects his food, and the ſkin of the head becomes more ſenſible *." All which ſymptoms nearly correſpond with thoſe of which I have already made mention from the obſervations of Petit and others. They generally occur, however, on the diſeaſe ſuddenly attacking a perſon about the age of puberty, as I have frequently obſerved. But it is to be remarked, that no one of them (51. 52. 53.) is pathognomonic; nor can we infer any thing from any of them ſingly; and that, if not all, at leaſt the greater part of them ſhould concur, while the preceding ſhould exactly correſpond with the ſucceeding ones. For they are individually in common to many other diſeaſes and cauſes. It is to be obſerved alſo, that the pain is occaſionally abſent, or that a ſenſe of heavineſs, rather than of pain, is excited, and that the patients are more diſpoſed to lethargy, while ſometimes the oppoſite of this happens, according as the accumulation of water takes place ſlowly, or quickly, or according as it proves hurtful by its quantity or acrimony †.

* Lib. ii. *De Morb.* n. 15. *edit. Marinel.*

† In the *Act. Helvet.* vol. i. c. 1. is to be found a diſſertation of Zwinger on hydrocephalus, well deſerving of peruſal, in which he has not only amaſſed inſtances of the diſeaſe from all hands, but very carefully compared and arranged them.

54. Patients labouring under watery ſwellings of the ſpine ſometimes loſe the power of their feet. But in that caſe, if they be newly born, or young infants, their feet or legs are bent inwards, on account of their remaining in the poſture they had held in the uterus, and at the ſame time fall away on account of the deficiency of the nervous energy. If the collection of ſerum be confined to the ſpinal marrow alone, the ſymptoms of hydrocephalus which I ſome time ago enumerated are wanting. But if it is collected in both ſituations, both ſets of ſymptoms are neceſſarily united. Moreover, if by accident or deſign theſe tumours are opened, and diſcharge lymph, in conſequence of which the head is relieved, or the ſwelling diminiſhed, or if, after a cicatrix is formed, the ſwelling recurs, it affords a certain proof that the ſeat and cauſe of *ſpina bifida* and *hydrocephalus* are in common.

THE PROGNOSIS.

55. HYDROCEPHALUS EXTERNUS, proceeding from evident cauſes, is not very difficult of cure at firſt. But when it has become inveterate, and is combined with a bad habit of body, it can ſcarcely be removed by the power of medicine. The internal complaint admits of ſcarcely any hopes. The *ſpina bifida*, again, is not long protracted, for it ſhortly proves fatal, and this

it does the ſooner the more aſſiduous we are n attempting its cure. The opening of the tumour, notwithſtanding what has been affirmed by ſome in its favour, is attended with certain death; which Swagerman * attributes rather to the admiſſion of the air, than to the injury ſuſtained by the nerves.

* L. c.

THE CURE.

56. WHILE the cure of the external ſpecies of the complaint is to be intruſted to ſurgery *, the remedies which are requiſite in that of the internal ſpecies belong properly to the phyſician. Fothergill † tells us, that at the beginning of the complaint the ſame method of cure ought to be adopted which is employed in the cure of worms; but that, in order to prove ſerviceable, all the excretions ought to be promoted. For, in conſequence of this, the lymphatics, on account of their inanition, become more capable of taking up the fluid, and abſorb that which is collected within the ſkull and brain with greater avidity. Watſon propoſes diuretics and purgatives, the utility of which has been confirmed by experience ‡.

* Inſtances of internal hydrocephalus having been cured are related by Piſo, *De Seros. Colluv.* P. I. ſect. 2. c. 1. p. 42. as well as by Morgagni and others. Calliſen in a few words delivers his ſentiments concerning the ſurgical treatment of the ex-

ternal hydrocephalus. He obſerves: "When the diſeaſe has attained its height, it generally defies the power of art; ſtill it is proper to attempt the cure by means of efficacious diſcuſſing and ſtrengthening topical applications, at the ſame time prudently employing a bandage: by which remedies alone, when no ſervice is obtained from ſcarification, bliſtering, or ſetons, the humour is to be drawn off." *Inſtit. Chirurg. hodiern.* p 114. § CCXCIII. But theſe means ought to be aſſiſted at the ſame time by the internal cure.

† L. c. ‡ Obſervations on the ſubject are likewiſe to be found in the *Comment. de Reb. in Scient. Nat. et Med. geſt.* vol. xviii. p. 392. 403.

57. It is proper, therefore, to purge the belly with jalap, ſyrup of buckthorn berries, of ſuccory with rhubarb, of manna, and ſimilar remedies, which evacuate the ſerous humours, and to give them repeated trials after diſcontinuing them for an interval of ſome days. During the intervening days we ought to give internally aperients and diuretics, as oxymel, or vinum ſcilliticum; *aſelli præparati*, the ſuccinated liquor of hartſhorn, the tinctura tartari, or that of antimony, or amber; the juice of parſley, or hops; gum-ammoniac; decoctions of the diuretic roots, eſpecially of turmeric and madder; thoſe of ſaſſafras wood, juniper, and guaiac; conſerve of juniper-berries, the fruit of dog-hips, and the like. Nor is it improper to employ cinnabar, and even mercury, if neceſſary: or, when very great atony of the ſolids, and torpor of the ſyſtem, cherith the com-

plaint, we may have recourſe to tonics and ſtrengthening remedies.

58. When the ſwelling of the head by theſe means has begun to go off, what remains of it ought to be reſolved by the occaſional employment of friction, or aromatic fomentations, or plaiſters; and, above all things, the flaccidity of the head ought to be ſupported by a proper bandage. It is ſerviceable alſo to ſcarify the back of the head, or to cauteriſe it with hot iron, or to paſs a ſeton through the ſkin of the back of the neck, to keep up the diſcharge of pus as long as poſſible, or by means of cantharides to excite extenſive ulcers in ſome part. But the tumours growing to the ſpine or *os ſacrum* muſt by no means be opened. For after opening them, in conſequence of a copious diſcharge of water from them, convulſions quickly ariſe, which are followed by death. Nay, according to Ruyſch, we muſt even prevent their burſting ſpontaneouſly. The application of tonics, or aſtringents, is therefore recommended. In order, then, to avoid the opening of them, which proves ſo pernicious, and yet to draw off the water from them without occaſioning danger, Mathey *, in a theſis of his preſented for public diſcuſſion, has propoſed employing a ſeton in preference, taking care nearly to fill up the hole with an iſſue, and to allow the water to come off only by drops. As this plan ſeems rational enough, I ſee no reaſon for not making a trial of it. For what may we not attempt in ſo hopeleſs a caſe?

* *Seance Publique de la Societ. Roy. de Med de Paris tenue le 9 Decembre* 1779, p. 32.

59. But in the internal ſpecies of hydrocephalus, deſcribed in par. 38. 52. and which I named acute and violent, I have learnt from experience that every remedy proves fruitleſs. Even though violent fever and headach were preſent, bleeding, leeches, cupping-glaſſes, or cantharides, the bath, fomentations, and plaiſters applied to the ſoles of the feet, have proved inefficacious, as well as reſolving, ſtimulant, and paregoric remedies.

60. In general we muſt place our reliance rather on the dietetic regimen, to prevent the diſeaſe, when it is already commenced, from proceeding to its height, or, when it is far advanced, from immediately proving fatal. It is therefore of great conſequence to abſtain from glutinous, fatty, and acid matters, to employ a light, dry kind of food, to drink very little, and to uſe the decoction of contrayerva-root, or that of the bark of ſaſſafras-wood, or of ſarſaparilla-root, or of burdock, in the caſe of the diſeaſe being ſlight, and ſlow in its progreſs, ſtill leaving ſome hopes of the patient's recovery, and likewiſe to uſe gentle exerciſe, and to breathe the dry, pure air of mountainous ſituations *.

* See *Diſſertatio de Hydroceph. quam pro gradu Doctoris defendit* Johannes Henricus Gaudelius, *Gottin.* 16 *Decem.* 1763. It is to be found in *Theſ. Diſſert.* Cl. Sandifort. vol. ii. p. 337.

CHAPTER III.

OF AGRYPNIA, OR PERVIGILIUM.

61. We name that long continued and unnatural watching, by which the ſtrength of the body, and particularly its functions, are thrown into a ſtate of derangement, *agrypnia*, *pervigilium*, or *vigilatio*, to diſtinguiſh it from the natural waking ſtate, which proves of ſhort continuance, and harmleſs.

62. It ſeems to depend on that condition of the ſenſorium commune, which takes place in people while awake, but more violent in degree, and more conſtant. In a ſubject which is involved in ſuch obſcurity, it may be allowable, in order to convey ſome idea of this ſtate, to ſuppoſe, that the fibres of the brain are ſtretched or moved in the ſame manner as when they are prepared for receiving ſenſations, and for performing the other functions of the brain with readineſs and alacrity, and that therefore they cannot, without the greateſt difficulty, become relaxed or quieſcent, as is neceſſary for the enjoyment of ſleep *. Every thing, therefore, which can ſtretch, vellicate, or in any way move or derange the ſenſorium commune, may give origin to agrypnia.

* Although the experiments both of Haller, Caldani, and Fontana, as well as thoſe of other authors of very great celebrity, made upon living animals, demonſtrate that the nerves are deſtitute of irritability; nevertheleſs we can have no conception of the power and action of the nerves, unleſs ſome motion, whatever the nature of that motion be, capable of being perceived, at leaſt by the mind, if not by the ſenſes, take place in them, and in their origin. Gaubius on this ſubject has very properly remarked (*Patholog.* § 524.), "It is very probable that the nervous ſyſtem, in the parts ſubſervient to ſenſation, is actuated by a certain moving power, which is probably ſimilar to the vital and muſcular one, by the action of which its fibres are rendered tenſe, rigid, and turgid, and fit for performing oſcillations on the application of a ſtimulus, again remitting and becoming flaccid in a ſtate of quieſcence. Nor is it of any conſequence whether it be derived from the animal ſpirits, as they are called, which are diffuſed through the nerves, or from any other origin, in a ſubject involved in ſuch obſcurity, and which leaves no room even for probable conjecture;" &c. to § 526. where he proceeds: "Although, therefore, the motions which are excited in the ſenſorium commune are much leſs manifeſt than thoſe of the muſcles, the extreme delicacy of the nervous medulla muſt render it liable to be affected and and changed, even more remarkably, at leaſt not leſs ſo, by immoderate exerciſe, than the muſcles are affected by exceſs of animal motion, ſuſtaining equal injury in conſequence. The very delicate ſtamina, in whatever manner they are thrown into motion either more frequently, for a longer time, or more violently, are exhauſted by their mutual attrition, loſe their tone, are thrown into irregular tremors, which they communicate to the neighbouring parts, become ſpaſmodically affected, as it were, and the nervous power is weakened and diſſipated: in conſequence of which, unleſs they are allayed by timely reſt, dulneſs of the external and internal ſenſes, imbecillity, confuſion of ideas, diſturbed ſleep, watching, a morbid imagination, delirium, and fatuity ariſe. May not the dryneſs and rigidity

which take place in the muſcles, ariſe likewiſe in theſe organs, in conſequence of which the mental powers are liable to become deranged before the proper period? Sentiments ſimilar to thoſe of Gaubius are entertained by others, and particularly by Bienville, who, when he mentions one of the cauſes from which he derives nymphomania, or furor uterinus, namely, exceſſive ſenſibility, has the following obſervations: "That which proceeds from a faulty ſtate of the nervous fibres of organic parts, imparting to them a more vivid vibration, whether in conſequence of their delicacy or tenſion, or both together, gives them greater acuteneſs of ſenſation." Nymphom. p. 51. *Amſterdam.* 1772.

63. Of this kind are, violent emotions, exceſſive ſenſibility, unuſual agitation in the circulation of the blood, too great an appulſe of it towards the brain, various kinds of acrimonies, pains, want, irritation of the ſtomach from exceſſive repletion, flatulency, crudities, hypochondriaſis, hyſteria, melancholy, thickneſs, dryneſs, or an inflammatory diatheſis of the blood, fever, a taint in any of the viſcera, and conſent with the brain, rigidity of the ſolids, and old age.

64. It is therefore very frequently *ſecondary*, or *ſymptomatic*. Sometimes, however, it occurs as a primary diſeaſe, requiring a peculiar name. Hence flow various diſtinctions, which are in proportion to the number of cauſes. The preceding diſeaſes, which it follows, and thoſe preſent, which it accompanies as a ſymptom, denote the *ſecondary* and *ſymptomatic* ſpecies of the complaint. The primary diſeaſe will be readily diſtinguiſhed from the accurate examination of all the preceding;

and exiſting ſymptoms, particularly if the ſymptoms of the ſecondary or ſymptomatic complaint be wanting. The due conſideration of the preſence or abſence of the cauſes which I have already enumerated would very much contribute to determine our judgment concerning this point.

THE PROGNOSIS.

65. PERVIGILIUM, when it proceeds from a ſlight and accidental cauſe, is quickly diſcuſſed. This is not the caſe with the *ſecondary* one; nor does the *ſymptomatic* diſeaſe in general terminate until the primary diſeaſe which has induced it be overcome, or greatly relieved. That which diſtreſſes hypochondriacal and hyſterical people, although it be generally void of danger, commonly proves tedious and obſtinate. But from whatever cauſe it proceeds, if it be protracted long, it occaſions heavineſs of the head, pain, anxiety, melancholy, laſſitude, dyſpepſy, anorexia, waſting, delirium, mania, phrenitis, apoplexy, vertigo, convulſions, and other moſt dangerous complaints, which are ſucceeded by death. Hippocrates, therefore, with good reaſon has obſerved: "Both ſleep and watching, when prolonged beyond bounds, are hurtful *. The convulſions and delirium ariſing from watching are

dangerous †. There is a tendency in pervigilium, among other ſymptoms, to convulſions ‡"

* Aph. 3. ſect. 11. † Aph. 18. ſect. vii. ‡ Coac. n. 20.

THE CURE.

66. As in every other diſeaſe, in the treatment of this one it is neceſſary to conſider the diverſity of its cauſes. With reſpect to the *ſecondary* and *ſymptomatic* ſpecies of the complaint, I ſhall ſay nothing farther here in addition to what I have already delivered elſewhere ſparſely, and ſhall ſtill have occaſion hereafter to ſay. It is removed in conſequence of the diſeaſes, of which it is an effect, being relieved, or completely overcome. In the caſe of the primary complaint, ſoftening, cooling, and correcting remedies, are recommended. Either bathing the feet, therefore, or immerſing the whole body in the tepid bath, frequently removes the moſt obſtinate caſes of pervigilium. Some patients are relieved by abſtaining from ſupper, while others find their account in having recourſe to it; ſome again, before going to bed, take a draught of cold water, or an emulſion, or milk, or whey, with advantage.

67. But if the plethora or heat of the blood be exceſſive, or ſuppreſſion of the evacuations has preceded, or inflammation is ſuſpected to be preſent, it is ſerviceable to draw blood. When there are ſymptoms of dyſpepſy they require gentle ca-

thartics. Uneaſineſs of mind is diſſipated by agreeable converſation, concerts, exerciſe, labour, travelling, employing wine, anodynes, and opium. Nor muſt I omit to mention, that in this caſe moderate venery itſelf has proved ſerviceable, in people of a vigorous conſtitution and temperate manner of living.

68. Exceſſive ſenſibility, or anxiety of mind, are relieved by paregorics and ſedatives, of which mention has already repeatedly been made. The chief of theſe are, water-lily flowers, thoſe of violets and wild poppy, camphor, muſk, the *liquor. anodyn. min.* of Hoffman, the heads of white poppy, the *ſyrupus de meconio*, and liquid laudanum of Hoffman. I knew a married lady whoſe ſenſibility was ſuch, that ſhe could never ſleep without having previouſly taken twenty or thirty drops of the *liquor. anodyn. min.* in a cup of cold water, before going to bed, a practice which ſhe had carried on for a number of years. Such as are affected with pervigilium in conſequence of weakneſs of the ſtomach and of the powers of digeſtion, procure ſleep from the employment of bitter and ſtrengthening ſtomachics. People in a ſtate of convaleſcence from a ſevere complaint, in which the head has been violently affected, are frequently diſtreſſed with very troubleſome watching. In ſuch a caſe the ſleep has been ſometimes reſtored by giving a little aſſafœtida, ſagapanum, et galbanum, every evening, repeating it cautiouſly for ſome days; but

relief has been more frequently obtained by employing more generous diet, by which the blood and other fluids are ſupplied with new juice, and gradually repaired.

69. But in ſuch caſes of pervigilium, eſpecially when the diſeaſe is primary, every thing which cheriſhes the cauſes of the diſeaſe ought to be avoided, together with calefacients, fermented liquors, and coffee; which laſt, however, does not always prove hurtful, and, on the contrary, ſometimes is attended with a ſalutary effect. A tendency to ſleep is likewiſe occaſioned by the ſoft murmuring of the falling of water, by the agreeable confuſed ſound of people ſpeaking or reading, or by the moſt profound ſilence prevailing around.

CHAPTER IV.

OF APOPLEXY.

70. I SHALL now proceed to the deſcription of that affection which is the oppoſite of pervigilium, namely *apoplexy*, and the various degrees of lethargy and inſenſibility. But, before proceeding farther, it is proper to remark, that apoplexy has frequently been comprehended by various authors under different names. To adduce ſome inſtan-

ces of the variety of names which have been beſtowed upon it, I may obſerve that it has ſomewhere been named by Hippocrates *aphonia* *, by Celſus *nervorum reſolutio* †, by Lommius *morbus attonitus* ‡, and by others *apoplexy*, *ſideratio*, and *percuſſio* ‖.

* Lib. iv. *De Vict. Ratione, et* aph. 51. ſect. 6. † Lib. iii. c. 27. ‡ *Obſ. Med.* l. ii. p. 81. ‖ Jo. Bapt. Molinar. *De Apoplexia*, ſect. i. § 3.

71. Apoplexy has the ſame ſignification as the Latin word *percuſſio*, from which probably has been derived the term *ictus ſanguinis*, which is employed to denote it by Sext. Aurelius Victor *, and Eutropius †, ſpeaking of the diſeaſe of Lucius Verus. For perſons affected with the complaint ſuddenly fall down, as if thunderſtruck, and are deprived of ſenſe and motion ‡. Celſus ſpeaking of it obſerves, "It ſometimes attacks the whole body, ſometimes is confined to a part only. Ancient authors have named the former *apoplexy*, and the latter *paralyſis*; I now obſerve both comprehended under the latter name ‖." Aretæus ſeems to have approached nearly to the opinion of Celſus, in the following paſſage: "Apoplexy, paraplegia, pareſis, and paralyſis, are ſynonymous terms; for they denote defect of motion, or of feeling, or of both; ſometimes of the mental faculty, and ſometimes of the other ſenſes. But apoplexy is the loſs both of ſenſation, of the mental faculty, and of motion,

over the whole body §. But both Hypocrates and his diſciples have applied the name of apoplexy, not only to the reſolution of the whole body, but to the paralyſis of particular parts, as appears when he makes mention of apoplexy of the tongue, or arm, of one ſide, or of particular parts of the body, or of the leg ¶.

* In Marc. Ant. † *Hiſt. Rom.* l. viii. ‡ Coel. Aurel. *Acut. Morb.* l. iii. c. v. Piſo, l. i. c. 16. ‖ L. 3. c. 27. § L. 1. c. 7. ¶ Aph. 40. ſect. vi. Prorrhet. l. 2. c. 10. *Coac. Prænot. Ex Dureti recenſione*, p. 215. n. 13.

72. In the ſame manner as the names of apoplexy, ſo do the definitions which authors have given of it differ from one another. But moſt of the moderns * have remarked, that neither the definition of it given by Aretæus (71.), nor that of others, ſufficiently diſtinguiſh it from ſyncope, or death itſelf, unleſs we add, that the reſpiration and motion of the heart remain. On which account they ſuppoſe that genuine and univerſal apoplexy is more accurately defined when they conſider it to be "The ſudden loſs of the ſenſes, both internal and external, and of voluntary motion, while the motion of the heart and reſpiration ſtill continue, but for ſo ſhort a time as to ſeem to have almoſt ceaſed during the paroxyſm." For, in the moſt violent ſpecies of the complaint, every body knows, that the action both of the heart and reſpiration is ſuppreſſed, and that therefore almoſt at the very moment of the attack

the life is extinguiſhed, or is ſo diminiſhed as to appear to be altogether extinguiſhed. Whatever, in ſhort, be the cauſe, it muſt neceſſarily ariſe chiefly from a faulty ſtate of the brain and nerves; in order that it may be properly diſtinguiſhed from death or ſyncope, which ariſes from other cauſes, and vitiated ſtates of the prœcordia.

* Van Swieten, § 1008.

73. Apoplexy, therefore, with good reaſon appeared to Morgagni to be, "The ſudden, or at leaſt rapid, diminution of the intimate motions which take place in the brain when we move and think, and which is ſometimes ſo great as to approach nearly to a total ceſſation, or to paſs at once into ſuch a ceſſation *." For immediately on its attacking a perſon, when it is in its moſt exquiſite and violent form, it either totally deprives the perſon of life, or more or leſs deranges the motion of the heart and arteries; it renders the reſpiration difficult, variable, great, ſlow, irregular, and is generally accompanied with ſnoring; it completely deprives a perſon of ſenſe or motion, or leaves very ſlight traces of them.

* *De Sed. et Cauſ. Morb.* Epiſt. ii. n. 5.

74. A perſon in a ſtate of apoplexy reſembles a man in a ſound ſleep and ſnoring, his limbs being ſtretched out, and deſtitute of power, his mouth open, and ſometimes emitting froth, his eyes ſometimes open, languid, and convulſed, ſometimes intirely ſhut; his face ſometimes turgid and flushed, remaining for ſome time of

the natural appearance, ſometimes quickly falling, and becoming pale, the heat ſometimes remaining, ſometimes not. It is moreover to be remarked, that very frequently the body is convulſed in one ſide, while it becomes paralytic in the other, or was ſo at the beginning, remaining in that ſtate for ſome time before the body is univerſally deprived of ſenſe and motion; which happens ſo frequently, that I ſcarcely ſuppoſe that there is a phyſician who has not obſerved it an hundred times.

* Jo. Bapt. Molinar. l. c.

75. The proximate cauſe has either appeared ſufficiently from par. 73. or it conſiſts in the diſunion of the connection which exiſts between the cortical and the medullary part of the brain, or between the medulla and the other parts of the body, at leaſt thoſe which are ſubſervient to ſenſation and voluntary motion; whatever explanation of that connection be adopted. But there may be various cauſes which interrupt or do away this connection; they are divided, however, moſt conveniently into ſuch as are not obvious to the ſenſes, and can only be conjectured and conceived in idea; and into thoſe which fall under the ſenſes, and are detected by anatomy within the cranium, generally conſiſting in the blood or its ſerum, and ſometimes referable to other morbid ſtates of the body, but more rarely*.

* Morg. l. c. Epiſt. ii. n. 5.

76. But to begin with the phenomena which anatomy has diſcovered, it appears beyond all diſpute, from the obſervations of Wepfer, Valſalva, Lieutaud, Morgagni *, and others, that the head is generally found ſwelled; that all the veſſels, both of the membranes and thoſe of the brain, cerebellum, and medulla oblongata, are unuſually turgid with blood; that the choroid plexus is diſtended with varices, or diſcoloured, or abounds with hydatids; that there is an effuſion of blood, or ſerum, or both, within the ventricles, ſometimes forming in the very ſubſtance of the brain an hollow, where there is none naturally, and collected within the meninges and brain; likewiſe that water is collected within the ſkull, and between the *dura* and *pia mater*, more copiouſly at the baſe of the ſkull, and frequently penetrating into the ſpinal tube; that a kind of jelly, in place of water, is found filling all the cavities of the brain; that ulcers †, effuſions of pus, abſceſſes, and various kinds of tumours occupying the cerebrum, cerebellum, or ſpinal marrow, are preſent; that the pineal gland is enlarged and indurated; that the membranes of the brain are too tenſe, or too lax; the brain itſelf ſometimes too flaccid, ſometimes corrupted, or harder and more ſolid than it is naturally; that a quantity of extricated air obſtructs the veſſels of the brain, or is forced into the brain and its membranes ‡; and, laſtly, that various complications of theſe

morbid conditions take place, which is of very frequent occurrence. Moſt authors likewiſe mention, that polypous concretions of blood have been found in the veſſels of the membranes and their ſinuſes; but Morgagni obſerved them ſo ſeldom, and at the ſame time ſo frequently combined with other morbid conditions, that he doubted much whether they alone could be conſidered as cauſes of apoplexy ‖.

* Vid. Willis, *De Cereb. Anat. et Morb. Convulſio. De Anim. Brut.* P. II. c. 2. *De Apoplexia.* Joh. Jac. Wepferi, *Hiſt. Apoplectic. cum alior. celebr. Med. Obſervat. hiſtoriiſque variis. Venet.* 1759. Boneti *Sepulchr. Anat.* L. i. ſect. 2. Morgagni *Oper. citat.* Epiſt. iii. iv. v. Lieutaud *Préces de Médecin.* l. 1. *des Maladies de la tête*, p. 181. *Hiſtor. Anat. Med.* T. ii. l. 3.

† Such ulcers have been obſerved by Boucher, particularly in ſcorbutic people. *V. Obſervat. de Apoplex.* See *Recueil d'Obſervat. de Médec.* T. 46. p. 544.

‡ Morg. l. c. Ep. v. Molin. l. c. ‖ Epiſt. iv. n. 23.

77. Such are the principal morbid conditions (76.) which are diſcovered after death in the heads of thoſe who have died of apoplexy, and which have been unanimouſly conſidered as ſufficient to induce the complaint, an opinion ſupported both by reaſon and experience. Thoſe which are occaſioned by external violence are ſo manifeſt of themſelves as not to admit of a doubt being entertained: for they proceed from violent and evident cauſes, and ſhew ſenſible injuries done to the head and brain. Under this head

come contuſions; blows; deep wounds; fractures of the ſkull, bruiſes, fiſſures, ſome part of the ſkull being depreſſed; and the like.

78. It remains for me to mention ſome of the cauſes, which are generated internally, but do not ſeem to be of ſuch a nature that it can be affirmed of them with certainty, that of themſelves they would have been ſufficient to produce the complaint. Theſe are generally conſidered as being a bad confirmation of the head; exoſtoſes pointing inwards from the ſkull; the filling up of the ſutures; induration or rigidity of the dura mater; the falx having acquired a cartilaginous or oſſeous nature*; calculi formed in the ſinuſes, eſpecially the longitudinal one; the growing together of the veſſels and ſinuſes; or the varicoſe and aneuryſmatic diſtention of them; a bony or cartilaginous hardneſs of the carotids, and compreſſion or diminiſhed diameter of the jugular veins †.

* Vid. Morgag. *Epiſt. Anat. Med.* iii. n. 21.

† In the Tranſactions of the Royal Academy of Sciences in Sweden, for the year 1757, vol. xviii. Zetzel makes mention of a boy, who, while he was engaged in whipping a top, having his neck too hard bound with his cravat, ſuddenly fell down in a fit of apoplexy. On his cravat being looſened, and blood being drawn, he again came to himſelf, recovering both ſenſe and motion, which he had intirely loſt.

79. As all theſe cauſes, therefore, point out, beyond a doubt, that in this diſeaſe the brain and its

appendages are in a certain meaſure overwhelmed or weakened, ſo as to become no longer capable of performing their offices; it will by no means be abſurd to conjecture, that the very tender and delicate ſubſtance of the brain itſelf has alſo ſuffered ſome injury, although no ſuch injury is diſcoverable on diſſection *; which is particularly obſervable in thoſe perſons who have died in conſequence of ſuſtaining a concuſſion of the head, and violent commotion in the brain, or who have been cut off in conſequence of apoplexy, proceeding from a fatal intermitting fever; for, according to Rahn †, generally no ſign of injury can be diſcovered in the heads of ſuch perſons; to ſay nothing of thoſe who have died of convulſions, of which we ſhall have occaſion to treat more properly hereafter.

* Valliſnier in particular ſays, that it appears from medical hiſtories, that in ſeveral dead bodies of perſons who had died of apoplexy, to the great amaſement of the diſſectors, not the ſmalleſt injury, either in the membranes of the brain, or in the cortical or medullary part, or in the ventricles, or in the ſanguiferous or lymphatic veſſels, or in any other part of the brain or head, was diſcoverable. *Dell' Uſo ed. Abuſo delle Bevande, é Bagnature Calde, o Fredde*, p. 57. Modena, 1725.

† *De Miro Capit. et Abdom. Conſenſu*, p. 78.

80. Hence, therefore, if I may be allowed to form a conjecture, it appears rational to ſuppoſe, that whatever fills, diſtracts, obſtructs, burſts, lacerates, corrodes, compreſſes, and therefore ac-

celèrates, or retards, or altogether ſtops the circulation of the blood and other fluids, of whatever kind, or in any way deranges the intimate ſtructure of the brain, may prove a cauſe of apoplexy. Under this head come plethora, too great a flow of blood to the head, lentor, an inflammatory diatheſis of it, exceſſive tenuity, an irritating acrimony proceeding from different cauſes, by which it is almoſt diſſolved ; exceſs or deficiency of the ſerous principle, debility and laxity, or the oppoſite affections, of the whole brain, and, laſtly, external violence.

81. Beſides, according to the moſt eminent phyſicians *, two other cauſes have appeared to be extremely apt to induce the complaint, namely, a deficiency in the quantity of the blood, which is not carried to the head in due quantity, and ſuch an obſtruction of the veſſels as prevents its paſſage to the brain. With regard to the former, I am doubtful whether a deficiency of blood, from whatſoever cauſe it proceeds, whether from deficiency of aliment, from exceſſive evacuations, from hemorrhages, or from the wounding of the arteries which go to the brain, would not give riſe to ſyncope rather than apoplexy. Nor do I well know whether perſons affected from theſe cauſes come under the definition of apoplexy (72. 73.) and experience the phenomena characteriſing the diſeaſe, ſuch as I have already related them in its deſcrip-

tion (74.). With regard to the other, it does not appear to me that the obſtruction or coalition of any artery carrying blood to the brain prevents its flowing thither freely, through other open paſſages, in ſufficient quantity to enable it in ſome meaſure to ſupport and perform its functions; which indeed has been clearly demonſtrated by anatomical obſervations †. For I conſider it altogether as an hypothetical and unheard-of opinion, that the carotids and the vertebral and cervical arteries ſhould be all obſtructed together; as this is a fact which has never been clearly demonſtrated, ſo far as I know, by any anatomical diſſection. But even if that were ever poſſible, ſtill I do not think it would clearly appear that the patient had died of apoplexy ‡; which muſt appear evident to any one ſufficiently acquainted with pathology. Nor can I agree with thoſe authors who, from having obſerved that ſenſation is extinguiſhed by compreſſing the brain, and reſtored on removing the compreſſion, have haſtily concluded that apoplexy was to be intirely derived from mere compreſſion of the brain. For the nature of the cauſes from which I have ſhewn it may proceed, is too various and manifold.

* Boerhaave, Van Swieten, Vogel, &c. † Willis, *De Apoplex.* & Bayle, *Tract. de Apoplex.* c. 14. ‡ Willis *apud* Bonet. *in not. ad Obſervat.* And. Laurentii, *Ex Controv. Anatom.* p. 803.

82. To the remote cauſes ſhould likewiſe be

added, certain other morbid ſtates of the body, from which apoplexy is ſaid often to originate, namely, a bony hardneſs of the arch of the aorta, or diminution of its diameter from whatever cauſe; organic diſeaſes of the præcordia or abdomen; a ſuffocating ſtricture of the arteria aſpera; great and hard ſwellings growing to the neck or throat; likewiſe certain diſeaſes, as obſtructions of the bronchia; hydrothorax; calculi in the gall-bladder *; hyſterical affections; difficult child-birth; a very acute pain occaſioned any where by a ſurgical operation; frequent epilepſy; a ſcabby eruption; exanthematous diſeaſes; gout; œdematous ſwellings of the feet, either retiring in ſpontaneouſly, or forced in; the ſudden retiring of the lochia and milk in puerperal women; the ſuppreſſion, or ceaſing, of the hemorrhoidal or menſtrual diſcharge, or the omitting of critical or uſual evacuations; iſchuria, both genuine and ſpurious; the drying of ulcers and iſſues; and ſo forth.

* Some accuſe theſe calculi of cauſing the complaint, adducing their own obſervations, and thoſe of others, who have diſcovered them in the bodies of ſuch as have died of apoplexy, Vid. *Eph. N. C. cent.* 4. obſ. 169. Morgagni has increaſed the number of theſe obſervations, both by his own, and thoſe made by others, *Epiſt. Anat. Med.* iv. n. 13. V. n. 6. 19. But Weitbrecht (*Com. Litt. ann.* 1734. hebd. 9. n. 2.), having diſcovered in an apoplectic body ten cyſtic calculi, ſharp, angular, and hard, and two of them of conſiderable ſize, ſet about an inquiry to aſcertain whether or not the apoplexy had proceeded from them;

and was forced to confeſs that a hiatus was left in his reaſoning, which he could not take upon him to ſupply; nor does Morgagni himſelf ſupply it, *Epiſt. Anat. Med.* iii. n. 5.), and agrees in opinion with Weitbrecht, excepting in the caſe in which calculi in the gall-bladder induce the moſt violent pains, as in that deſcribed by Hoffman (*Med. Syſt. Rat.* T. 4. P. 2. ſect. 1. c. 7. *Theſ. Pathol.* § 10.). For in conſequence of ſpaſmodic affections being excited in the abdomen, the blood is forced to the upper parts of the body, or made to accumulate there.

83. But certain things in particular are obſerved to prediſpoſe the body in ſome meaſure to this diſeaſe. They are named the *cauſæ proegumenæ*. Of this ſort are, the being born of apoplectic parents, infancy, but much more frequently old age, the period of life from forty to ſixty, a large head, a ſhort neck, the ſanguine or phlegmatic temperament, obeſity *, an indolent life, or one too much devoted to ſtudy, too long ſleeping, rich living, and dwelling in marſhy ſituations, as alſo where the atmoſphere is too much rarified.

* Schwenke mentions a caſe of apoplexy ariſing from the veins being too much compreſſed, *Hæmat.* p. 22. 23.; and Haller does the ſame. *Elem. Phys.* T. iv. l. x. ſect. vii. § xiv.

84. When a perſon is thus prediſpoſed to the complaint (83.), it is at laſt excited by violent exerciſe, exceſſive dancing, particularly after feaſting; by the abuſe of wine and ſpirituous liquors; by ſneezing, or frequent and violent coughing; by the venereal orgaſm; by the quickened motion of a very ardent fever; by the heat of a warm bath or ſtew; by anger, terror, fear, melancholy; or by the ſudden

checking of the perſpiration; by the ſtraining of the lungs in blowing bottles, or evacuating the inteſtines *, or in parturition †, or in ſpeaking loud; by crudities in the *primæ viæ*; by coarſe, fat meat; by lying on the back; by the copious drinking of medicated waters, eſpecially in advanced life, or in the caſe of perſons of a phlegmatic temperament; by exceſſive repletion of the ſtomach; by geſtation, or remarkable ſwelling of the uterus; by violent emetics ‡, and great and long-continued anxiety of mind. But the complaint is particularly favoured by the ſouth and north winds blowing alternately; by a rainy winter; by hazy weather; by the rapid alternations of heat and cold; which laſt cauſes, according to Balglivi, Lanciſi, and others, are moſt frequently the occaſion of apoplexy ſometimes prevailing as it were epidemically.

* Morgagni relates the caſe of a man's having been ſeized with the moſt violent apoplexy when at ſtool. Valſalva alſo obſerved the ſame thing. Vid. Morgagn. *Epiſt. Anat. Med.* xiii. n. 19.

† Among others, Adulphus ſaw a fatal apoplexy take place from the rupture of the *plexus choroides* in a woman, who improperly haſtened her labour by making too violent efforts; *Act. N. C.* T. i. obſerv. 241. And I conſider it as probable, that puerperal women, who ſuddenly die during parturition, have frequently been cut off in conſequence of the ſame thing happening.

‡ A remark of Antonio Tita, quoted by Morgagni (*Epiſt. Anat. Med.* iii. n. 11.), ſhews the pernicious effect of the employment of emetics in perſons prediſpoſed to apoplexy, the

truth of which I myſelf have had too often occaſion to obſerve.

85. There are likewiſe certain poiſons which, in conſequence of poſſeſſing the ſecret power of injuring the intimate texture of the brain and nerves, hurry a perſon, however little prediſpoſed to the complaint, into a fatal apoplexy *. The chief of theſe are, opium, hyoſcyomus, ſtramony, cicuta, tobacco, and particularly the copious inhaling of the ſmoke of it †, ſaffron, and other narcotics; likewiſe certain putrid, phlogiſtic, inflammable, or otherwiſe deleterious effluvia, ſuddenly ariſing from ſewers, ditches, wells, dungeons, and ſepulchres; the fumes of hot embers ‡; the halitus ariſing from fermenting wine or beer in a cloſe place; fixed air extricated by the admixture of various bodies; and, laſtly, lightening.

* Thoſe who are of opinion that the irritability of the heart is firſt deſtroyed by theſe, will not grant that apoplexy, but rather ſyncope, is occaſioned by them.

† Tobacco is an acrid, emetic, and at the ſame time a narcotic plant, of the ſpecies of hyoſcyomus. Whoever wiſhes to obtain information with regard to the injuries occaſioned by uſing the powder or ſmoke of it, may conſult Tiſſot, *Epiſt. Var. Arg.* p. 92. *et ſeq.* and Didelot, *Avis aux gens de la Campagne, ou Trait. des Malad. le plus Communes*, c. xvii. p. 119. Jo. Andr. Murray, *Apparat. Medicam.* vol. i. n. 180. p. 464. I ſhall mention only a few terrible inſtances of the effects produced by it. In *Eph. N. C. Dec.* 2. *ann.* 10. obſ. 131. p. 222. is to be found an account of ſnuff taken into the noſtrils in too great quantity having given riſe firſt to coma, and afterwards

to a fatal apoplexy. In the German Journals for the year 1730, p. 179. as Didelot, juſt quoted, informs us, the caſe of a ſoldier is related, who was ſo fond of ſnuff as to be in the habit of conſuming three ounces of it daily. On arriving at the thirty-ſecond year of his age, he began to be frequently affected with vertigo, after which he was attacked with a moſt ſevere ſtroke of apoplexy, of which he died. Another man is mentioned in the ſame work, who, in conſequence of the immoderate uſe of Spaniſh tobacco, firſt loſt his ſight, and was next ſeized with palſy. Borrichi, in a letter to Bartholin, makes mention of a man whoſe brain had become ſo dry, in conſequence of the immoderate uſe of tobacco, that after death his ſkull, inſtead of brain, was found to contain a blackiſh, grumous ſubſtance, compoſed of ſeveral membranes; as if the brain had been rendered ſapleſs, in conſequence of too great an excretion of mucus from the noſe being excited. Van Helmont, Tulpius, and the phyſicians of Breſlaw, as we learn from Didelot, make mention of apoplexies originating from that cauſe. I need ſcarcely mention the well-known fact of the two Sileſian brothers, who, in conſequence of ſmoking for a wager, both died apoplectic, the one at his ſeventeenth pipe, and the other at his eighteenth.

‡ Portali ſaw two people who had been ſuffocated in conſequence of ſmoke eſcaping through the chimney from an adjoining apartment into that in which they ſlept. Their face was fluſhed; their eyes ſhining; their limbs and lower jaw were in a ſtate of relaxation; their ſkin ſoft and warm; and their abdomen ſwelled. In the bodies of ſuch as had died from this cauſe, he found the blood-veſſels of the brain full of blood, and the ventricles contained a frothy ſerum, which was likewiſe ſometimes tinged with blood. The pulmonary artery, the right auricle and ventricle, the vena cava, and jugular veins, were diſtended with frothy blood; and the bronchia were frequently moiſt with a red ſerous fluid. The pulmonary veins, the left auricle and ventricle, and the aorta, were either empty, or appeared ſo. In moſt of them the blood was frothy,

thin, and readily paſſed into the cellular membrane. The epiglottis was raiſed, the glottis open, and the tongue ſwelled to ſuch a degree, that it could ſcarcely be contained within the mouth. The eyes were prominent, not flaccid, but coutinued ſhining even for three days. He obſerved ſimilar appearances on diſſection in the bodies of perſons who had been drowned and ſuffocated. He is of opinion, that by means of the vapour inhaled, the air is rendered incapable of diſtending the lungs, and, therefore, that in conſequence of the expiration being too long protracted, and the return of the blood impeded, apoplexy is induced: *Hiſt. de l'Acad. de Scienc. an.* 1775. On the ſame ſubject conſult alſo Carminat. *De Morbib. &c.*

86. Let us now proceed to the peculiar varieties of apoplexy, and its different degrees. The firſt diſtinction of it, which indeed has prevailed from the moſt ancient times (71. 72.), is into *univerſal* and *partial*. In the former the whole body is injured, in the latter only one ſide, or ſome particular parts. The former we name *genuine* and *exquiſite*, becauſe in it all the animal functions ceaſe, or are interrupted; the other is denominated *ſpurious*, or *ſlight*, becauſe in it, although they are injured, they are not ſo univerſally, and are not completely ſuſpended †.

* See alſo Franc. Scardona, *De Cognoſc. et Cur. Morb.* l. i. c. i. § viii. & ix. † Platner, *Art. Med. Morb. Sopor.* § 376.

87. Partial apoplexy (86.), when one ſide of the body is deprived of power, is diſtinguiſhed by the peculiar name of *hemiplegia:* but when the parts beneath the head are affected with the complaint, it is named *paraplegia*, or *paraplexia*,

which, however, is of much leſs frequent occurrence. I am aware that theſe laſt affections by ſome are conſidered as ſpecies of palſy, not of apoplexy; as if palſy were another kind of diſeaſe, intirely different from apoplexy. But they ſeem to forget the opinion which Celſus, Aretæus, (71.), and, among the moderns, Pitcairn *, entertained of paralyſis, as theſe authors do not ſeparate it from apoplexy, but conſider it as being nearly allied to it. Nor do thoſe perſons ſeem more deſerving of credit who are for ſeparating palſy from apoplexy, on account of the cauſe of apoplexy being contained in the brain, while that of palſy is ſituate in the nerves that lie out of the brain. For they pretend not to know that the loſs of ſenſe and motion of one ſide, or of particular parts, which conſtitutes real paralyſis, may likewiſe immediately ariſe from a morbid condition of the brain. Who at this time can be ſo ignorant of anatomy as not to know, that hemiplegia is generally owing to an injury ſuſtained by the oppoſite ſide of the brain, when, as Haller remarks †, it was a fact perfectly well known even to Hippocrates, and, as Hoffman obſerves ‡, to Aretæus and Caſſius, the moſt ancient medical writers, not to mention modern anatomiſts intimately acquainted with the ſubject ‖ ? For moſt of the fibres of the medulla of the brain and cerebellum which ariſe from the right ſide ſeem to lead to the left, while thoſe

which proceed from the left ſeem to go to the right ſide of the body; ſo that the nerves both proceeding from the brain and *medulla oblongata*, in the courſe of their diſtribution, decuſſate each other. This, however, cannot be aſſerted of all the ſpecies of paralyſis, as there are many arguments for ſuppoſing, that certain nervous fibres, proceeding from one hemiſphere of the brain, are not diſtributed to the oppoſite ſide of the body, but are ſtretched along the ſame ſide. Hence I have ſometimes known a hemiplegia occurring from the brain on the ſame ſide being injured, the proof of which is afforded by Valſalva himſelf, and Morgagni, who were otherwiſe very keen advocates for the decuſſation of the nerves §.

* *De Apoplexia.* † *Phyſiolog.* T. iv. p. 222. *ed Venet.* ‡ *Comment. in* Galen, *De Uſu Part.* l. 10. c. 12. || Morgagn. *Adverſ. Anatom.* vi. *animad.* 84.; and before him Valſalva, Lanciſi, and afterwards Mollinell, Platner, Ludwig, and a good many others. But Haller in particular claims our attention. In his *Elem. Phyſ.* T. iv. p. 221. n. 1. he obſerves, that there are very numerous inſtances of wounds and morbid conditions of the brain giving riſe to affections of the oppoſite ſide of the body. A palſy of the right-hand was induced in conſequence of an effuſion of pus having taken place in the left ſide of the brain: Morgagn. *De Sed. et Cauſ. Morb.* ii. p. 288. An inſtance of the right ſide and arm becoming paralytic from morbid ſoftneſs and putrefaction of the left thalamus of the brain, is mentioned by the ſame author, p. 82. He gives us another account of a palſy of the right ſide proceeding from a collection of water in the left ventricle, and the eroſion of the brain, in p. 83.; and in p. 21. he mentions a ſimilar inſtance occaſioned by blood effuſed in the ſame ſitua-

tion. And in p. 83. we find, that a morbid ſtate of the choroid plexus of the left ſide gave riſe to a paralytic affection of the oppoſite ſide. An account alſo of a palſy of the right ſide of the face, occaſioned by a collection of ſerum and hydatids, is mentioned in *Mem. des Sçav. Etrang.* iii. p. 452. Cloſſy, p. 6. gives an account of palſy of the oppoſite ſide of the body, proceeding from an effuſion of blood between the membranes of the brain. For an account of a hemiplegia of the oppoſite ſide, occaſioned by a wound in the eye with a ſword, ſee *Phil. Tranſ.* vol. liii. But not to be prolix, for a careful account of ſimilar caſes conſult Haller, T. iv. lib. 10. ſect. vii. § xxix. ‖ *Epiſt. Anat.* xiii. n. 19. & 25. and *Epiſt. Anat. Med.* ii. n. 16. Many ſuch inſtances are to be found in Haller, *Elem. Phyſ.* T. iv. l. 10. ſect. vii. § xxix. p. 223.

88. Planc obſerved this to happen principally in injuries of the cerebellum, in which he contends, that on this account it is not the oppoſite but the ſame ſide of the body which becomes paralytic *. But it is to be obſerved, that one ſide is not always paralyſed; for it is frequently convulſed †, as I have ſeveral times obſerved, when the irritation prevails over the compreſſion. Sometimes, likewiſe, while the oppoſite ſide becomes paralytic, in conſequence of the injury of the brain, the correſponding ſide is affected with convulſions and clonic ſpaſms ‡: which may be eaſily explained, if we ſuppoſe that the origin of the nerves, which go to the affected ſide, is irritated, at the ſame time that that of the nerves, which are diſtributed upon the oppoſite ſide, is compreſſed, in conſequence of which the parts, to which theſe nerves belong, become paralyſed.

* *Lettera Sopra un' Apoſtema del Cervelletto.* † Hippocr. aph. vii. *et de Vulner. capit.* Schouten. *Gewondte Hoofd.* p. 64. Scultet. obſ. 17. Bartholin. hiſt. 2. cent. v. Bouvart. *Hiſt. de l'Acad. Roy. des Scienc. de Paris* 1700, obſ. 19. Salmuth. l. 1. obſ. 17. ‡ Horſt. l. ii. obſ. 1. Lorry, *Mem. des Sçav. Etrang.* T. iii. p. 375. *ex* Haller. l. c. T. iv. p. 223.

89. Nor is every injury of one hemiſphere of the brain always ſufficient to occaſion the paralyſis of one ſide of the body; for, as ſome fibres proceed from all parts of the medulla of the brain, it does not happen in conſequence of one ſide of the brain being in ſome meaſure compreſſed, that the nervous influence is intirely extinguiſhed in the ſame or oppoſite ſide of the body, becauſe this may ſometimes be ſuſtained by the fibres proceeding from the intire hemiſphere, and diſtributed over the whole body, without palſy neceſſarily following. This appears particularly when both hemiſpheres have been injured without occaſioning the paralyſis of either ſide. For in ſuch a caſe, ſo great an influx of the nervous power may ſtill take place from the brain to the different parts of the body as to ſufficiently keep up the vigour and ſenſation of them all. But when it happens that one ſide is paralyſed, and the phyſician, on being called, cannot now diſtinguiſh which ſide was firſt affected, on account of the whole body appearing void of ſenſe, he ought in that caſe to inquire of the domeſtics and attendants upon what ſide the patient lay, for it will prove to be the ſide which was firſt affected, and

the injury will generally be found exiſting in the oppoſite ſide of the brain.

90. From the inveſtigations of anatomiſts it appears to be pretty well aſcertained, that in conſequence of certain parts of the brain being affected, certain parts of the body become paralyſed. In conſequence of the compreſſion, or other morbid affections of the thalami of the optic nerves, ariſes *amauroſis*, or *gutta ſerena*, namely, a paralyſis of the optic nerves and retina *. Willis has remarked, that if the *corpora ſtriata* be in any manner injured, the legs become deprived of ſenſe and motion †. Nor is it irrational to ſuppoſe, that, according to the various parts of the *corpus calloſum*, or *medulla oblongata*, which are injured, ſometimes one, ſometimes another pair of nerves may become affected, giving riſe to morbid conditions in various parts of the body: which is evinced particularly in that ſpecies of hemiplegia which does not prove violent at the beginning, but is ſecondary, namely, that in which the exquiſite and univerſal apoplexy ſometimes terminates, in conſequence of the cauſe which oppreſſed the corpus calloſum ‡, or centre of the brain, being directed rather to one ſide. But if the cauſe, as the interruption of the flow of the blood in the veins at the baſe of the brain, compreſs the nerves proceeding from thence to the tongue; it generally occaſions aphonia and reſtleſſneſs, as Lanciſi remarks ‖. Nay, if it

deſcend to the baſe of the brain and cerebellum, overwhelming all the nerves that proceed from thence, and ſtill more if it be propagated to the origin of the cervical nerves, from which the greater part of the cardiac nerves proceed, life itſelf, in conſequence of the motion of the heart and thorax being completely interrupted, muſt neceſſarily be immediately extinguiſhed. Hence Morgagni (*Epiſt. Anat. Med.* iii. n. 25.) ſeems to deſerve notice, when he obſerves, that we may conjecture that the brain in apoplexy is principally affected, from the reſpiration being much injured, from the fæces being paſſed unconſciouſly, and from the livid colour of the face and lips. But if it paſs into the tube of the ſpine, overwhelming particularly the ſuperior vertebræ, it is almoſt an univerſal opinion that paraplegia is occaſioned §.

* Platner, l. c. Ludwig, l. c. † *De Anima Brutor.* c. ix. p. 106. ‡ Peyronie, *Mém. de l'Acad. Roy. ann.* 1741. ‖ *De Subit Mortib.* l. i. c. viii. § ix. x. § Platner and Ludwig, l. c. and Morgagni, *Epiſt. Anat. Med. Cit.* We find in Boerhaave (*Prælect. in Inſtit.* § 401.) the deſcription of a paraplegia firſt ariſing from an effuſion of ſerum in the beginning of the ſpine, next terminating in apoplexy, from the ſerum being diffuſed all the way to the cerebellum. Duverney mentions a ſimilar caſe, as may be found in Duhamel *R. Scient. Acad. Hiſt.* l. iii. ſect. v. c. 2. n. 1. Tiſſot obſerved a caſe of true paraplegia, which had taken place in a vigorous man, in conſequence of a maſs of hard earth having fallen upon the back of his neck, while he was engaged digging in a pit. The ſurgeon was not able to diſcover any luxation or fracture in the part. *Epiſt. Med. Var. Arg.* p. 97.

91. It happens at times that only ſome muſcles become paralyſed, as thoſe of the face, eye-brows, arm, tongue *, pharynx, œſophagus, ſtomach, inteſtines, uterus, bladder, and anus, of which we ſhall ſpeak more at large hereafter in the proper place; and hence various ſpecies of *ſlight* or *partial* apoplexy, or, as they are generally named, paralyſes, take place. Of theſe, however, there are two kinds, according to the different ſeats of the cauſes, one proceeding from compreſſion, ſuppuration, ulceration, wounding, congeſtion, or other injuries of the brain or ſpinal marrow, from whence all the nerves are given out †; the other, proceeding from ſimilar cauſes, affecting the ſheaths of the nerves, ganglia, and neighbouring parts, or compreſſing, ſtraitening, obſtructing, or in any other way injuring the nerves themſelves in their courſe. Under this claſs fall various kinds of tumours growing to the nerves, very frequently dropſy of the cellular membrane with which the nerves are ſurrounded, fracture, luxations, exoſtoſes, and contuſions of the vertebræ and other bones, wounds, metaſtaſes, poiſonous effluvia, eſpecially metallic ones, as thoſe of arſenic, lead, cinnabar, and mercury, and other noxious, minute, and penetrating bodies, or various kinds of vitiated fluids reaching the nerves, or their ſheaths.

* In the Paris Medical Journal for June 1782, p. 547. is to be found an account given by Majault of a paralyſis of the tongue and inferior extremities, which had been excited without either plethora, or dyſpepſy, or any other cauſe, merely by cold. It was eaſily removed within ſix days, ſolely by the uſe of an infuſion of arnica flowers, to which he added volatile alkali, in the proportion of twelve drops to the pint.

† Palſies ſupervening upon injuries of the ſpinal marrow do not take place in the oppoſite ſide, but upon the ſame ſide in which the accident happens. See Haller, *Elem. Phyſ.* T. iv. l. 10. ſect. vii. § 29. p. 223. where the teſtimonies of Turner, Riolan, Salicet, and thoſe from the *Edinburgh Tranſactions*, are quoted.

92. But as, independent of the nervous power, ſoundneſs and ſtrength of the muſcular fibres, and their inherent irritability, are neceſſary towards the performing of muſcular motion; it muſt be confeſſed that ſometimes, if not *genuine*, at leaſt *ſpurious*, or *imperfect*, paralyſis, which would probably be named with more propriety *immobility*, is obſerved to take place, merely in conſequence of the texture of the muſcular fibres being relaxed, or in conſequence of the weakened coherence and diminiſhed irritability of the elements compoſing them, or in conſequence of congeſtion of the cellular texture, or œdematous ſwellings, or obſtructions, as well as from the influx of blood through the arteries into the muſcles being impeded, which laſt ſeems to be requiſite alike for exciting or keeping up the power of the muſcles. This morbid condition is obſerved to take place principally in ſcorbutic

people, in thoſe with bad fluids, after wounds, and in bodies exhauſted with exceſſive venery.

93. In every ſpecies of palſy certain ſtages are uſually obſerved: for there is either a total privation of all ſenſe and motion, when a complete *anæſtheſia* takes place; or the motion of the part only ceaſes, while the ſenſe remains; or there is a loſs of ſenſe, but not of motion. Each of theſe is named *imperfect paralyſis*. Sometimes acute pains are occaſionally felt in the part affected with numbneſs and deprived of motion; which phenomenon ſeems ſcarcely reconcileable with its paralytic inſenſibility. We very rarely fall in with the ſpecies of hemiplegia in which the motion on one ſide is loſt, while the ſenſe remains, or in which the ſenſe of the other ſide is loſt, while the motion remains. An account of this kind, however, has been tranſmitted to us by Heiſter *. It is likewiſe a rare occurrence to meet with the ſpecies of palſy mentioned in the third place; ſome inſtances of it, however, occaſionally occur in the works of practitioners. Burdot not long ſince related the caſe of a woman of ſixty years of age, who had been ſeized with a hemiplegia of the right ſide, attended with the loſs of ſenſe and motion, the latter of which, however, returned, though not the former †. I myſelf, who have frequently obſerved this, a few years ago was called to a lady of rank labouring

under hemiplegia, who, three months after being affected with the complaint, in conſequence of the ſuppreſſion of the catamenia, recovered the motion of her ſide, but not the feeling of it. When the feeling in paralytic limbs remains without the motion, ſome ſuppoſe that they ſufficiently explain the fact by alleging, that leſs of the nervous influence is required for ſenſation, than for motion. But, on the other hand, when the motion remains or returns, while there is no ſenſation preſent, how will they explain the phenomenon? One will probably approach nearer to the truth in aſſerting, that the nerves aſſigned to muſcular motion have regained their power, but not thoſe which go to the ſkin ‡, or, which comes to the ſame thing, that the nerves proceeding from the ſpinal marrow have been relieved, while thoſe are not which in a great meaſure are ſupplied from the trunk of the intercoſtal nerve.

* Anæſtheſia is now employed to ſignify the privation of all ſenſe, both internal and external; and hence it is named in Latin *ſtupor*. At preſent this word is employed by noſologiſts to denote a particular diſeaſe, which they conſider as differing from paralyſis no leſs than from *catalepſis* and *ecſtaſis*. And although I obſerve on what ground they allege this diſtinction reſts, I have not been led to ſuppoſe, that a particular ſpecies of diſeaſe ſhould be made of it, becauſe thoſe ſpecies of anæſtheſia of which they make mention may be eaſily referred to palſy, or catalepſy, or ecſtacy, at leaſt of the ſpurious kind, as I ſhall readily ſhew in the chapter on catalepſy and ecſtacy.

† *Ephem. N. C.* cent. ii. obſ. 196. ‡ *Act. Helvet.* T. vi. p. 191. || Rayner. Bonaventur. Martini, Profeſſor in Piſa, has recourſe to a ſimilar explanation. In *Inſtit. Med.* T. i. c. v. p. 59.

94. If a particular part only becomes affected with numbneſs, and altogether loſes the feeling, it is commonly ſaid to labour under *pareſis*, a particular ſpecies of imperfect and ſpurious palſy. But many authors employ this term to denote the paralyſis of the lower extremities only. Others, again, employ it to ſignify that atony of the inteſtines, which generally comes on ſpontaneouſly in the *colica Pictonum*, or *convulſive* colic, or ſucceeds to the employment of narcotics; or to denote the paralyſis of the arms, which ſupervenes on this colic. Aretæus, moreover, obſerves that pareſis takes place when the bladder becomes paralyſed, and is no longer capable of emitting or retaining the urine *.

* *De Cauſſ. et Not. Diuturn. Affect.* l. 1. c. vii.

95. Hitherto I have been ſpeaking of the varieties of partial apoplexy. It remains for me to ſay ſomething of thoſe in common to both the partial and univerſal ſpecies of the diſeaſe. It is therefore divided, according to the nature of the place primarily affected, into *idiopathic* and *ſympathic*, that is to ſay, according as its cauſe exiſts immediately in the head, or in any other part from whence it may exert its force upon the

head. Likewiſe, with reſpect to the cauſe, it is either of the *ſanguineous*, or of the *ſerous*, or *phlegmatic* ſpecies; or it is of the ſpecies named *atrabilaris*, or *metaſtatica*, ariſing particularly from the gout, lochia, or milk being ſuddenly forced in; or it is of the kind named *traumatica*, *temulenta*, *hyſterica*, *epileptica*, *convulſiva*, *ſcorbutica*, *venerea*, *febrilis*, *polypoſa*, *præcordialis*, *mephitica*, *narcotica*, *halituoſa*, *fulminea*, and ſo forth.

96. Moreover, in the *genuine* or *exquiſite* ſpecies of the complaint (72. 86.) certain degrees derived from the morbid ſtate of the reſpiration, pulſe, and heat, are generally conſidered; on account of which it is commonly diſtinguiſhed into *ſlight*, *violent*, and *very violent*. But Galen *, to whoſe opinion ſome authors ſtill adhere †, extends theſe degrees to four, including that which is *very ſlight*, ſimply *ſlight*, *violent*, and *moſt violent*; although theſe diſtinctions ſeem to be ſo nice as to eſcape obſervation in the courſe of practice.

* *Comment. in Coac. Prænot. text.* 476. † Molinar, l. c.

97. That ſpecies is named *moſt ſlight*, in which the reſpiration is found to be freer, the pulſe regular, and the heat of the face and body almoſt natural. That ſpecies, again, is named ſimply *ſlight*, in which the reſpiration and pulſe are irregular, or intermit, in which an alteration in the heat takes place, and the body becomes ſomewhat cold. But when the breathing is very

difficult, the pulſe hard, and very variable, while the body becomes cold, theſe ſymptoms conſtitute the *violent* ſpecies. Laſtly, we ſay that the *moſt violent* is preſent when the breathing is accompanied with ſnoring, or, in place of it, the reſpiration is not obſerved to go on, and no pulſe is perceived, while the face puts on the cadaverous appearance, and the patient is all over bedewed with a cold ſweat, accompanied with frothing at the mouth, and complete relaxation of the ſphincter of the anus and bladder. With Morgagni *, however, I have obſerved, that the morbid ſtate of the reſpiration indicates various degrees of ſeverity of the complaint, but, notwithſtanding of this, that the moſt violent ſpecies of the complaint may ſometimes occur unaccompanied with this ſymptom. For the reſpiration has at times appeared good and regular during the preſence of the moſt violent and fatal ſpecies of the complaint; which is confirmed by the obſervations of Valſalva and Varetti. It appears, moreover, very probable, that in the *very ſlight*, or *ſimply ſlight* ſpecies of the complaint, the brain, properly ſo called, is more affected; while in the *violent*, or moſt violent ſpecies, the cerebellum, or medulla oblongata, or ſuperior part of the ſpinal marrow, are principally injured.

* *De Sed. et Cauſſ. Morb.* Epiſt. ii. n. 13. 14.

THE DIAGNOSIS.

98. An attack of apoplexy may be foreſeen, not only from the ſymptoms already enumerated in par. 82. 83. 84. 85. but likewiſe from others, the enumeration of which I ſhall immediately ſubjoin; and this is a matter of the utmoſt conſequence to medical men, whoſe buſineſs it likewiſe ought to be to preſerve the health of mankind. It is, therefore, ſaid to be threatened, if a perſon, while ſleeping profoundly, is ſeized with night-mare *, and grinding of the teeth, or, contrary to cuſtom, ſnores violently; if the perſon is diſtreſſed for ſome time with a ſevere headach, without any manifeſt cauſe, exciting nauſea or vomiting, and yielding to no remedy; if the memory, which was formerly retentive, is ſuddenly impaired, or becomes confuſed, and degenerates into a ſtate of oblivion; if the head becomes heavy, the mental faculty dull, and the perſon is apt to fall into profound ſleep; if *muſcæ volitantes* appear, without there being any reaſon to apprehend that amauroſis or ſuffuſion have preceded; if the *tunica albuginea* is red, and tears flow ſpontaneouſly; if the patient, while in the erect poſture, or ſtooping, becomes affected with vertigo when the ſtomach is not full, and it frequently recurs; if old people, who, in conſequence of a morbid ſtate of the brain or optic

nerves, have loſt their ſight, during the night-time ſometimes perceive flaſhes of light before their eyes. But if this happens during the winter ſolſtice, there is reaſon to apprehend that a fatal apoplexy will come on in the enſuing ſpring at fartheſt. If a perſon, who has neither been indulging in wine nor tobacco to exceſs, while engaged in reading, ſees the lines double or obſcurely, contrary to what uſed to be the caſe; if the ears ring with a buzzing noiſe, which has neither been occaſioned by living in damp ſituations, nor newly plaiſtered walls, nor any other evident cauſe; if the ſpeech becomes imperfect; if the words are pronounced ſlowly; if confuſed anſwers are returned; if the mouth becomes diſtorted; if unuſual grief or anxiety come on; if the difficulty of ſwallowing increaſes, or when a perſon wiſhes to ſwallow, a cough is excited, although in the mean time neither any inflammation nor tumour obſtructs the fauces, and no hyſterical or hypochondriacal affection is preſent; if fainting frequently comes on; if one or other ſide of the body is occaſionally affected with numbneſs, which cannot be derived from the compreſſion or ſwelling of parts, or from the effects of gout, rheumatiſm, or ſcurvy; if the feeling becomes leſs acute; if the hand, which was formerly quick in its motion, becomes leſs prompt in writing; if fatigue is quickly occaſioned by gentle walking; if the feet totter, and are as it were dragged along; if

the limbs are affected with ſleeping; if after a wound or contuſion in the head, rigor, or long-continued ſhiverings during the preſence of fever, or *catoche*, attack the patient †. Theſe and ſimilar ſymptoms, muſt frequently occur, if not all, at leaſt ſome of them, when the approach of apoplexy is announced: although it ſometimes attacks people in perfect health without being preceded by any ſymptom.

* Incubus, or ephialtes, is a particular difficulty of breathing which occurs during ſleep, accompanied with a ſenſe of weight preſſing upon the breaſt, under the appearance of a ſpectre, or frightful object, from which the perſon is relieved on at length awaking, after much groaning and ſtruggling, nothing farther remaining but a palpitation of the heart, and pretty frequently the motion of the diaphragm being accelerated. Young people are generally more liable to this complaint. Various cauſes, however, induce it; as, plethora, a full ſtomach, worms, emotions of mind, ſometimes the paroxyſms of intermitting fevers, hydrocephalus, and other morbid ſtates of the brain, and particularly lying on the back after a full ſupper. But apoplexy is preceded by that ſpecies of it which originates from a quantity of blood or ſerum collected in the brain, medulla oblongata, or beginning of the ſpinal marrow. It ought not to be treated lightly; although it ſeldom falls under the care of a phyſician as a diſeaſe: I therefore think that it ought rather to be referred to general pathology. For the account given us by Cælius Aurelianus, (Tard. Paſſ. l. 1. c. 3.), from Silimachus, one of the followers of Hippocrates, concerning the incubus which prevailed at Rome, I do not find confirmed by the obſervation of any other author.

† Concerning *Catoche*, or *Catalepſy*, we ſhall treat hereafter

in an expreſs chapter. It is an affection in which the patients remain ſtupid and ſtiff, and, as it were, in a ſtate of *ecſtacy*.

99. But when the complaint commences its attack, we ought to carefully conſider whether it be of the *ſanguineous*, *ſerous*, or *convulſive* ſpecies. For I have reſolved to treat ſeparately of theſe three alone, induced by the authority of the moſt experienced practitioners, becauſe almoſt all the other ſpecies of the complaint may be conveniently referred to theſe three. And, firſt, the *ſanguineous* ſpecies is indicated by the patient's having lived richly; by his having ſpent an agreeable and eaſy life; by his being in his prime, and of the ſanguine temperament; by its being the ſpring-time, by the weather being warm and damp; and by evacuations of blood having been ſuppreſſed. It more frequently comes on without being preceded by any ſymptoms, particularly if it ariſes from the rupture of any of the veſſels of the brain, or from any violent cauſe propelling the blood to the head, in which caſe an acute, ſudden, and violent headach is frequently the forerunner of the complaint. After the attack in this ſpecies the face becomes red, the veins of the eyes and temples ſwell, the eyes remain half-open, ſhining, fixed, and prominent. The reſpiration is frequently freer, ſometimes accompanied with ſnoring, the pulſe generally great and full, at other times it is more violent, as in inflammation; as the diſeaſe advances it becomes

languid and ſlow; the reſpiration is gradually diminiſhed, and, when the apoplexy is very violent, it is accompanied with exceſſive ſnoring, grinding of the teeth, convulſive motions, ſympathetic vomiting, and is at length ſucceeded by death. Some patients, when they fall down, ſhriek out. At other times, at the very moment of time when they are ſtruck, a hemiplegia comes on. The phyſician, however, ought to be on his guard againſt immediately inferring, merely from the paleneſs of the face, or the patient's advanced life, that it is not the ſanguineous ſpecies. For not unfrequently in old men who have died of apoplexy, with a pale face, blood has been found effuſed within the brain, in which caſe the paleneſs has been the effect of the deficient *vis vitæ*, and not of want of blood.

* Molinar, l. c.

100. As the ſanguineous ſpecies of apoplexy receives its name from the quantity of blood diſtending the veſſels of the brain, or effuſed within its cavities; ſo does the ſerous ſpecies derive its name from ſerum or phlegm, or water, filling or inundating the ſame veſſels. And although it does not always happen that water, ſerum, or phlegm, found within the ſkull in perſons who have died of apoplexy, can be conſidered as the cauſe of the complaint, becauſe ſometimes apoplexy proceeding from another cauſe is followed by the effuſion of ſerum, as an effect; it appears from certain

obſervations, however, that it is ſometimes occaſioned by a collection of water (76.). Nor is it always neceſſary that this water ſhould be collected in great quantity; but it ſeems to be ſufficient, that though ſmall in quantity, it is of an acrid and irritating nature. For, as Morgagni * ſuppoſed, the brain, by means of its acrimony, if not convulſed, may be ſo irritated or corroded by it, as to give riſe to apoplexy. But if the acrimony be not preſent in it, and the quantity of water be ſmall, it does not ſeem of itſelf ſufficient to induce apoplexy, unleſs other cauſes, both internal and external, concur with it, powerfully and quickly overwhelming the brain.

* L. c. *Epiſt.* iv. n. 1. 5. 27. *et alibi.*

101. I do not deny, however, that ſerum or water, even in ſmall quantity, may ſometimes be ſufficient for inducing apoplexy, provided it be all at once accumulated in the ventricles, or ſuddenly effuſed about the brain under the meninges. For then, not the quantity, but the unuſual and ſudden violence of the compreſſion or diſtenſion, deſerves no ſmall conſideration. On the other hand, when the collection of ſerum or water takes place by ſlow degrees, it is nothing new for the brain to be overwhelmed with a great quantity of fluid without apoplexy being occaſioned. This appears chiefly in hydrocephalus, in which it is a well-known fact that the

brain can eaſily bear a ſlow and gradually formed preſſure or diſtraction.

102. But that the apoplexy proceeds from an effuſion of ſerum or phlegm, is indicated by the phlegmatic temperament, and by a cachectic and pale habit of body; by old age; by the cauſes which increaſe the quantity of watery or ſluggiſh fluid; by its acceſſion not being ſo ſudden as in the *ſanguineous ſpecies;* by the paleneſs and ſwelling of the face; by the depreſſion of the veins; by the flaccidity and coldneſs of the limbs; by the impeded reſpiration; by there being greater ſnoring, and more of the hiſſing ſound; and, laſtly, by the pulſe being depreſſed, ſlow, ſmall, rare, variable, irregular, and intermitting. It is frequently preceded by vertigo, particularly in the afternoon and at night, by torpor, dulneſs, faultering of the tongue, and deep ſleep. Moreover, thoſe who are ſeized with this complaint are not immediately deprived of the uſe of their tongue, they ſometimes open their eyes and mouth, and diſcharge a vaſt quantity of ſaliva. But, to omit no particular, I may remark, that Tiſſot * obſerved, that in this ſpecies of apoplexy the reſpiration is leſs laborious, and that the patient ſometimes vomits more eaſily and abundantly. In which reſpect how far he approaches to the truth, I ſhall leave to the deciſion of others.

* *Avis au Peuple ſur la Sante,* T. i. c. ix. *De l'Apoplex.* § 149.

103. It remains for me to treat of the ſymptoms of the *convulſive* or *ſpaſmodic* ſpecies of apoplexy, or that which derives its origin from ſpaſms (95.). It is mentioned by Sydenham *, Hoffman †, Molinar ‡, Tiſſot ‖, and others, although it has been overlooked, or purpoſely neglected by ſome. Thoſe perſons are liable to it who have for a long time laboured under ſpaſms of the abdomen, who are troubled with colic pains, hypochondriaſis, or hyſteria, calculi in the gall-bladder, coſtiveneſs, or violent or ſudden emotions of mind, as rage or terror; who are affected with epilepſy, or in whom the cuſtomary hemorrhoidal or menſtrual diſcharge ceaſes, or who are afflicted with ſpaſms from anomalous gout. It is generally previouſly announced by weakneſs of the external ſenſes, by vertigo and dimneſs of ſight, by heavineſs, trembling, or torpor of the joints, and by ſevere and long-continued hyſterical and hypochondriacal affections. Immediately before its attack the extremities become cold, the ſkin dry, the face and eyes red, the carotid arteries throb with greater violence and frequency, and in the others there is a great and hard pulſe. Since, therefore, in women it frequently commences with hyſterical and ſpaſmodical affections, or in men with complaints in other parts, and particularly in the lower part of the abdomen, it is alſo named *hyſterical* or *ſympathetic*. As it ariſes from ſpaſms, it is ſometimes

ſlight and eaſily cured, becauſe when it proceeds the length of beginning to extinguiſh the ſenſibility, the ſpaſms muſt neceſſarily immediately become relaxed, and ceaſe; ſometimes it terminates in hemiplegia, or at leaſt palſy of ſome part; or at the very beginning aſſumes the appearance of partial palſy, which does not remain very long; ſometimes alſo it is violent, which, however, is of leſs frequent occurrence, and quickly terminates the patient's exiſtence, like other ſevere apoplexies §.

* In *Diſſert. Epiſt.* † *Med. Syſt.* Part ii. ſect. 1. c. vii. § ix. ‡ L. c. ‖ *Epiſt. Var. Arg.* p. 88.

§ Tiſſot mentions two caſes of hyſterical or convulſive apoplexy, in the following terms: "A handſome young woman of rank, about twenty years of age, a few months before, as I learnt, in another city had very happily got over the ſmall-pox, which were extremely mild, and had afterwards been repeatedly purged. From that period ſhe had been liable to hyſterical affections, and, in particular, for about two months, had complained of ſevere headachs, and remained low ſpirited. As the regular practitioner who at firſt attended her was at a diſtance, ſhe was committed to the care of an empiric, who had formerly gained conſiderable reputation, by whom ſhe was treated with various evacuant and refrigerant remedies, but to no purpoſe. All the ſymptoms grew worſe; at length, the headach becoming intolerable, ſhe ſuddenly loſt the uſe of her ſpeech, being only able to point out the ſeat of the pain with her finger. I did not ſee her until juſt an hour before her death: her face was red; her pulſe intermitting, irregular, very ſmall, and very bad; there was the greateſt anxiety; and at length ſhe ſuddenly died. Her parents were deſirous that her head ſhould be opened; I was preſent on the

occaſion, merely as a ſpectator. No injury whatever was diſcovered. It is a matter of doubt whether or not any morbid appearance would have been obſerved on opening the breaſt. Probably the following caſe may afford a preſumption of the contrary. Upon the ſame year a girl of eighteen was ſeized with a ſuppreſſion of the menſes, in conſequence of fear; after which ſhe frequently fell into fainting-fits, which the ſurgeon at that time living here endeavoured to remove by various means. At length, after a variety of complaints, which eluded all the remedies employed for ſix or ſeven months, ſhe was ſeized with profound ſleep, which he endeavoured to overcome, but in vain. Every remedy proving fruitleſs, her parents waited upon me three days after ſhe had been ſeized with the deep ſleep. I found her ſleeping, and not to be rouſed by any noiſe, or irritation. According to my practice in ſimilar caſes, I enjoined perfect quiet. Twelve hours afterwards ſhe awoke quite recovered, but very weak. On accurately weighing all the ſymptoms, and finding from every circumſtance that there was ſome local injury, but no fever, I preſcribed for her ſtrengthening remedies, combined with antihyſterical ones. They ſucceeded to my wiſh; but in conſequence of her having again been alarmed a few days after, ſhe was attacked with ſuch dreadful anxiety, accompanied with excruciating headach, conſtant ſickneſs, and terrible convulſions, that I have ſeldom beheld a complication of more ſhocking ſymptoms. I firſt allayed the ſeverity of the diſeaſe by a ſingle doſe of opium, and afterwards gradually overcame it by the remedies already mentioned: but the patient's ſtrength being broken by the long duration of the diſeaſe, and particularly by the remedies employed, left little hope of a perfect recovery. While ſhe was eating a bit of pudding, the anxiety returned, and ſhe was carried off within a minute's time. Her parents, in conſequence of receiving money for it, were induced to give their conſent to the opening of the body. The heart was found probably ſomewhat larger than natural, ſoft, and pale. Did this proceed from the frequent fainting-fits to which ſhe had been liable?

In other reſpects I never ſaw a body more free of any morbid taint. Was her death occaſioned by a paralyſis or convulſion of the heart? Without doubt all the muſcles in hyſterical women very readily and frequently become relaxed; and why may not the heart? I ſhall therefore believe that it proceeded from this cauſe, until I can diſcover ſome one more likely to have occaſioned it." *Epiſt. Var. Arg.* p. 80. 89. 90.—The account given by De Haën, to which Tiſſot refers here, of a ſudden death which took place without any diſcoverable morbid condition in any part, and which was, therefore, aſcribed to a ſpaſmodic affection of the nerves, is as follows: "A young woman came to our hoſpital, who had been for many years troubled with a ſevere palpitation at the heart, panting, anxiety of the præcordia, and frequent cough, and had tried a variety of remedies without experiencing any relief. As ſhe had been a couple of days without any paſſage in her belly, I cauſed an injection to be adminiſtered, and was preparing other things for her relief, when ſhe was ſuddenly carried off. On diſſecting the body, the vitals were found to be of a perfectly healthy appearance. Nor was there any thing in the whole body, either in the ſolids or fluids, which could have been conſidered as faulty, excepting a double, but very ſlight, adheſion of the lungs to the pleura, and three lumbrici in the ileum. But it is a fact well known to anatomiſts, that thouſands of people live in the enjoyment of perfect health with theſe lumbrici, and much more extenſive adheſions. So that we may conclude with Boerhaave, § 826. "Its cauſe is generally an inordinate and violent influx of the vital ſpirits into the villi of the heart," &c. De Haën, *Rat. Med.* P. iv. p. 36. 37.—To theſe ought to be added, a remarkable inſtance of convulſive apoplexy, which ſucceeded to a relapſe of epilepſy, accompanied with convulſive motions, and, laſtly, tetanus, in a girl of nineteen years of age, and which proved fatal in twenty-four hours. On diſſection, Boucher could not diſcover any thing to which apoplexy could be aſcribed. *Récueil d'Obſervat. de Médic. &c.* T. 47. p. 77.

104. As convulſive or ſpaſmodic apoplexy, therefore, may ariſe ſometimes from cauſes ſituate about the origin of the nerves, ſometimes from thoſe exiſting in other parts remotely ſituate, it appears that there are two kinds of the complaint, namely, an *idiopathic* and *ſympathetic* one. With reſpect to the ſpecies ſucceeding to ſpaſms originating in the brain or cerebellum, and their appendages, as in it the origin of the nerves is idiopathically affected, it is eaſy to conceive in what manner it is occaſioned, namely, by the ſame cauſes in conſequence of which the ſpaſms were produced, preſſing upon, irritating, or in any other way injuring the brain, in the full extent of the word. But it is a very difficult matter to explain the origin of that ſpecies in which the brain is only ſympathetically affected; for in what manner the ſpaſms which ariſe in the viſcera, as thoſe of the lower part of the abdomen and elſewhere, can act upon the principle of the nerves, and occaſion apoplexy, is a matter involved in very great doubt, as phyſiologiſts contend that the dura mater poſſeſſes neither ſenſe nor motion, and that the nerves are totally void of irritability, or any contractile power.

105. But, if I were allowed to conjecture, I ſhould ſuppoſe, that the manner in which ſpaſms occaſion apoplexy is not uniform. In the firſt place, the motion of the blood in the parts which

are ſpaſmodically affected, may not only be impeded, but alſo that portion of it which was to have paſſed thither may be turned elſewhere, and forced to the brain in greater quantity, and with greater violence, than is proper, filling, diſtending, and ſometimes even burſting the veſſels; which will happen the more readily the more difficultly the blood returns from the head, in conſequence of the greater veins being compreſſed and ſtraitened by the ſpaſms of the neck, diaphragm, thorax, and præcordia. Hence it is evident, that apoplexy will ariſe from plethora of the veſſels of the brain, which may be eaſily reſolved, if the ſpaſms are quickly relaxed in conſequence of the ſenſe of the nerves becoming languid; or, on the other hand, if the veſſels are burſt, and pour out their blood, that it will ſpeedily terminate in death. But if it be ſuppoſed that both of theſe ſpecies are properly referable to the ſanguineous or ſerous one, I ſhall not diſpute the point.

106. But the ſlight or partial apoplexy, or paralyſis, which is left by ſpaſms in any particular part, comes more properly under the head of the ſpaſmodic or convulſive ſpecies. For it ſeems to ariſe from the nerves which go to a particular part being compreſſed by the violent contraction of the muſcular fibres, or muſcles ſurrounding them. That palſy, however, is of ſhort continuance. For, although the nerves are reſolved, in a ſhort

time, in conſequence of the ſpaſm being relaxed, if they have not ſuffered great violence, both they themſelves, and the affected part, intirely recover their ſenſe and motion, as frequently happens in ſevere convulſive affections. If, in conſequence of the optic nerve being compreſſed by a ſpaſmodic affection of the muſcular fibres which nearly ſurround it *, a perſon is deprived of ſight, the ſight is recovered on the relaxation of the ſpaſm taking place;—a fact which I have more than once had an opportunity of obſerving.

* I am aware that the exiſtence of ſuch fibres is denied by ſome modern anatomiſts; but it is an indiſputable fact, that the muſcles which move the eye are ſituate ſo near the optic nerves, that, in conſequence of the former becoming ſpaſmodically affected, the latter may alſo become conſtricted and compreſſed.

107. Indeed almoſt every ſpecies of apoplexy, named *convulſive* or *ſympathetic*, might be explained in this way; if a particular ſpecies of it, in which the brain itſelf, on account at leaſt of the conſent of the nerves, ſeems to be affected without its ſuffering any of the injuries above mentioned, and ſhewing no mark of the diſeaſe after death, did not leave ſome obſcurity, and require another explanation. This happens particularly in hyſterical women, infants, and children, who have died of apoplexy in conſequence of convulſive diſeaſes, the fomes of which is ſi-

tuate out of the head; as appears from the hiſtory of medical caſes, and as I myſelf have already hinted (75. 103.). For every body knows, that from cauſes lurking in the ſtomach and inteſtines, the brain is ſo affected, that the whole body, in conſequence of it becomes convulſed, or delirium or ſtupor come on, or the patient is overwhelmed with deep ſleep: but that the convulſive motions, delirium, ſtupor, or lethargy, ceaſe on the material cauſe being expelled, or otherwiſe rendered harmleſs, by means of a cathartic. Why, therefore, may not apoplexy be occaſioned by ſimilar cauſes, acting more violently, and returning more frequently, without any diſcernible mark being left in the brain? But in what manner ſpaſms, and the conſent of the nerves, ever occaſion any immediate violence to the brain, remains to be inveſtigated.

108. Some derive the complaint from the exceſſive derivation and exhauſtion of the nervous fluid, by means of irritating cauſes exiſting ſomewhere in the ſyſtem, in conſequence of which the brain is rendered ſapleſs and exhauſted. Others affirm that the ſpaſm is communicated, by means of the nerves, to the medulla of the brain, of the poſſibility of which they are perſuaded, notwithſtanding that repeated experiments have demonſtrated that the nerves are deſtitute of irritability; and thus they conceive to themſelves that the ſentient and moving

principle is extinguiſhed. But how little theſe hypotheſis ſhould be truſted, and how far admitted, will appear partly from phyſiology, and partly from the remarks already delivered. Some alſo, to remove every difficulty, do not heſitate to ſuſpect, that in hypochondriaſis and hyſteria ſomething is transfuſed into the blood from the receſſes of the lower part of the abdomen, or from the uterus, when the cauſe of the ſpaſms is ſituate in them, by which it is rendered thick, and ſo coagulated as to become ſtagnant in the minute veſſels of the brain. Although I might grant without any diſpute that this may ſometimes happen, ſtill the apoplexy occaſioned by it would more properly be named *metaſtatica* than *convulſiva;* and certainly ſymptoms of ſuch a metaſtaſis in the brain or its veſſels ought not to have been wanting.

109. For which reaſons others, not to ſhun the difficulty, being convinced that in the convulſive ſpecies of the complaint, not only the functions of the brain are deſtroyed with the life, but alſo that occaſionally no morbid condition is diſcernible in it on diſſection, perſuade themſelves that in conſequence of the ſpaſms the paſſages of the blood may become ſtraitened and obſtructed, preventing its gaining admiſſion to the brain, or at leaſt that the motion of the heart is intirely ſuppreſſed, (to which Tiſſot *

ſeems to incline); or that the heart itſelf, (which is another conjecture of his), becoming paralytic, ceaſes to act, thus cutting ſhort the patient's life. But when we conſider the paſſages which conduct the blood to the brain, we can ſcarcely ſuppoſe it poſſible for them to be intirely obſtructed by means of ſpaſms. Although we ſhould grant, however, both that theſe paſſages are obſtructed, and that the motion of the heart is interrupted by a ſpaſm, as they ſuppoſe, it would not appear perfectly certain whether apoplexy or ſyncope conſtituted the primary diſeaſe. For it is no new thing for women who are ſubject to violent convulſive affections, in conſequence of this to be cut off by a ſudden death or fatal aſphyxia. If, again, it be alleged, that a paralyſis of the heart has occaſioned the patient's death, as he ſuſpects in the ſecond place, it remains to be ſtill a ſubject of inquiry, whether this palſy of the heart be idiopathic, or occaſioned by ſympathy in conſequence of the function of the brain being injured. If the firſt takes place, death will be occaſioned by ſyncope; if the latter, by apoplexy. On this laſt ſpecies, therefore, ſtill hinges the force of the propoſed inveſtigation, namely, in what manner in the ſympathetic apoplexy, which has occaſioned death without any conſpicuous and viſible faulty condition, the brain becomes affected by conſent with other parts, and what the nature of its in-

jury is. We may conjecture that one of two things takes place, namely, that either the ſpaſmodic contractions are propagated to the minute arteries of the brain,—for it is not inconſiſtent with reaſon to ſuppoſe that they are poſſeſſed of irritability †,—in ſuch a manner that, in conſequence of their becoming ſpaſmodically affected, the connection between the *cortex* and *medulla* of the brain, and between the medulla and other parts of the body (75.), is cut off; or that the extremities of the nerves are ſo intimately affected by the cauſes inducing the ſpaſm, that their origin alſo, namely, the brain, cerebellum, and medulla oblongata, receives a ſimilar injury in their very delicate, elementary ſtructure, on account of which ſuch a ſubverſion of the fibres, or other unnatural change in them, takes place, by which the exerciſe both of ſenſe and motion may be prevented ‡. The nature and action of the nerves being ſtill unknown, or in a great meaſure involved in abſolute obſcurity, do not allow us to proceed farther.

* L. c. *ſupra* par. 103. n. ii.

† See the obſervations delivered on this ſubject in the *Commentary on Inflammation*, in the notes at par. 37. Moreover, Tiſſot, (*Tratt. de' nerv.* T. i. p. 2. art. 6. § 266. *et ſeqq.*); after Senac (*De Coeur*, T. ii. p. 169.), Haller (T. ii. p. 206. & 202. & 252. *et oper. min.* T. i. p. 223. *et alibi.*); and Morgagni (*Ep. Anat. Med.* 24. n. 20. 23.) affirms, that arteries have their nerves: and very lately Compareti, who has obſerved a great

number of nerves, not only ſurrounding arteries, but intimately blended with their fibres.

‡ I do not wiſh here to paſs over a remark in point made by De Haën; it is as follows: "It is more difficult to explain why apoplexy originates from the ſame cauſe (*namely, the conſent of the intercoſtal nerve* preſſing upon, or vellicating the thorax); but, on the other hand, we can readily conceive, that one ſmall nerve may be ſome where ſo violently preſſed and irritated as to occaſion a derangement of the whole *ſenſorium commune*. In treating an ulcer, a nerve being roughly handled (as I have ſometimes ſeen happen from the application of the *lapis infernalis* to bring down a *fungus*), occaſions univerſal convulſions. From the mere application of poiſons to the nerves of the ſtomach, which come from the intercoſtal nerves and par vagum, ariſes a ſpecies of apoplexy, which frequently in a ſhort time diſappears on the ſpeedy expulſion of the poiſon. On the rupture of an abſceſs of the lungs, this apoplexy has remitted; and in a ſhort time along with it ceaſed the paralyſis which had accompanied and followed it." *Rat. Med.* P. iii. c. 2. p. 121.

110. It remains for me now to explain in what reſpect apoplexy differs from ſimilar diſeaſes. It differs from ſyncope, becauſe in the latter the face is always pale, the reſpiration either ceaſes intirely, or is very low, no pulſe is felt in the arteries, ſweat commonly breaks out on the forehead, and the extremities are cold. It cannot be denied, however, if the greateſt degree of apoplexy be preſent, that is, immediately before death, that ſometimes it can ſcarcely be diſtinguiſhed from ſyncope, unleſs we turn our attention to preceding circumſtances, which may be learned from the domeſtics.

There is alſo a conſiderable diſtinction between *apoplexy* and *hyſterical ſuffocation*; for in the latter neither do the parts become completely paralyſed, nor is all feeling loſt, as hyſterical women both when pricked and twitched are ſenſible of pain; and beſides, if the affection be unuſually ſevere, the reſpiration and pulſe ſeem to fail altogether, as in ſyncope, and the patients, on recovering from the fit, generally remember what paſſed while they ſeemed to be almoſt dead. Nor is any objection afforded to this by the hiſtory, if it be true, of the woman whom Veſali diſſected; as it may be ſuppoſed, with more probability, that ſhe was cut off by an *hyſterical* or *convulſive apoplexy*, not in conſequence of ſuffocation. Genuine *epilepſy* bears the greateſt affinity to apoplexy in point of the total privation of ſenſation; for red-hot iron may be applied to the ſkin in epilepſy without being felt. It is diſtinguiſhed from apoplexy, however, becauſe in epilepſy, if it is complete, the whole body is ſeized with convulſive motions.

111. It now remains for me to ſay ſomething, as I undertook at the beginning, concerning particular comatoſe affections, named *carus*, *coma*, and *lethargy*. For they approach ſo nearly to apoplexy, that Sennert, Boerhaave, and not a few others, conſidered them as ſlighter ſpecies of that complaint. And as they proceed from nearly

the ſame cauſes as it, particularly abſceſſes of the brain; collections of mucous or coagulated lymph between the dura and pia mater; effuſions of limpid, or thick and turbid ſerum about or within the brain; and, laſtly, from plethora of its veſſels ſucceeding to diſeaſes of the lungs, and morbid conditions of the præcordia, particularly organic ones, as polypus of the heart, aneuryſms, varices, and the like *; it may not be improper in this place to give a ſummary view of the phenomena peculiar to each, in order that they may be the more readily diſtinguiſhed from real and violent apoplexy.

* Morgagni, l. c. *Epiſt.* 6.

112. Carus, or the *apoplexia minor* of ſome authors *, conſtitutes the higheſt degree of them. Perſons affected with it, although, as in apoplexy, they are overwhelmed with the moſt profound ſleep, when ſhaken, or pricked, or rouſed with noiſe, open their eyes, retract the limbs which are punctured or twitched, and, when queſtioned, return an anſwer, although incoherently; and, notwithſtanding that they immediately relapſe into the ſleep, they do not ſnore, but enjoy free reſpiration. On the contrary, in apoplexy, the patients, when pricked, ſhaken, or burnt, are void of ſenſe and motion, and put on the appearance of one in a profound and uninterruptd ſleep.

* Sauv. Noſol. cl. iv. § xxix.

113. *Coma*, which is alſo named *cataphora* by Galen, ſeems to be a ſlight ſpecies of *carus*. A perſon affected with it is not only more eaſily rouſed, although he again relapſes into ſleep, but returns appoſite anſwers to the queſtions which are put to him. It is divided into *coma ſomnolentum*, and *vigil*. In the *coma ſomnolentum* the patient ſleeps very profoundly, but not ſo much ſo as in *carus*. In the *coma vigil*, again, which is likewiſe named *typhomania*, and *coma agrypnon*, or *agrypnodes*, there is an inſuperable diſpoſition to ſleep, from which, however, the patients frequently ſtart, as if terrified with a ſudden noiſe, or perpetually alarmed with frightful dreams, by which they are conſtantly prevented from enjoying the ſleep which they ſo earneſtly deſire.

114. Both kinds of the diſeaſe (112. 113.), that is, both carus and coma, are ſaid by ſome authors to be conjoined with fever: others, however, affirm that they are unaccompanied with it; according I ſuppoſe, as they are accidentally found accompanied with fever or not. For if the complaint be primary, fever is not neceſſarily conjoined with it; while it is accompanied with fever, if it is ſymptomatic, that is, if it be a ſymptom of any fever, or of inflammation, or cephalitis, or phrenitis, or any other febrile diſeaſe. It generally ſupervenes upon hemiplegia, phrenitis, acute fevers, and inflammations.

It very frequently precedes the variolous, morbillous, and miliary eruption, and almoſt conſtantly accompanies ſlow malignant nervous fevers, and acute gaſtric ones. When mild coma ſupervenes in acute diſeaſes, although it continues long, it does not portend an unfavourable event; becauſe it prevents or allays delirium, headach, and other ſevere ſymptoms, and in young people often brings the fever to a more ſucceſsful termination *.

* Bagliv. *De Capit. Affect. in Acut.*

115. With regard to *lethargy*, ſome aſſert that it is unaccompanied with fever, while others affirm that it is accompanied with fever, and that too of the ſlow kind. I ſhould aſſign the ſame reaſon for this difference of opinion which I have adduced in the laſt paragraph. Lethargy is an immoderate ſleep, oppreſſing the patient night and day: it does not, however, come on ſuddenly, but ſteals upon the patient gradually, and increaſes daily. The patient lies on his back, with his eyes half-ſhut, and his mouth open; when rouſed, he yawns, ſpeaks little, complains of heavineſs or pain in the head, and is ſeized with a total forgetfulneſs of all paſt tranſactions, even of thoſe which have happe ed immediately before. When interrogated he ſcarcely returns an anſwer, inſtantly relapſing into his drowſineſs. His pulſe, in the mean time, is frequent, ſoft, irregular, languid, and ſlow, and ſometimes

alſo undulating; his reſpiration ſlow and weak. It may therefore be defined to be, a profound ſleep, accompanied with a total oblivion of external circumſtances; of ſuch a nature, however, that the perſon labouring under it may ſtill be rouſed, and made to anſwer queſtions, although in an obſcure, ſhort, and irregular manner.

THE PROGNOSIS.

116. Genuine and exquiſite apoplexy is a moſt dangerous diſeaſe, generally proving fatal; becauſe either on account of the brain being obſtructed or impeded, the violence and motion of the fluids is turned more forcibly towards the brain, or the matter injuring, corroding, or compreſſing the brain is ſo great as to reach the intire origin of the nerves, and the cerebellum itſelf, which is ſuppoſed to be more immediately connected with life. It proves fatal principally to plethoric old men, who lead an indolent life, and to thoſe whoſe brain is weakened by an hereditary taint, or by ſome diſeaſe, frequently in three, or, at moſt, in ſeven days *. Sometimes alſo it extinguiſhes life in one or two days, nay, in a moment's time: and if a perſon eſcapes it, it is very apt to return.

* *Coac.* n. 187. Cœlius Aurelianus, l. 2.

117. The *ſanguineous* ſpecies of the complaint is more dangerous than the *ſerous*, and both of them more ſo than the *convulſive* kind. In the ſanguineous ſpecies, if the blood eſcapes out of

its proper veſſels, we can ſcarcely entertain any hopes of its being diſcuſſed or abſorbed, or that the mouths of the veſſels will cloſe again. The *ſerous* ſpecies is frequently ſucceeded by hemiplegia, or ſevere palſy of ſome part, or oblivion, or fatuity, or languor. The *convulſive* ſpecies is generally reſolved a few hours afterwards, of its own accord, by vomiting, diarrhœa, ſweat, urine, or ſome other excretion, leaving no mark behind, or at leaſt a very ſlight one in the mouth, tongue, or other parts of the body. But if it burſts the veſſels, as ſometimes happens, or otherwiſe injures the origin or progreſs of the vital nerves, which occaſionally happens after epilepſy, or violent convulſions, eſpecially in plethoric people, it generally on a ſudden proves fatal. No ſmall danger alſo attends the *apoplexia metaſtatica*, as the *arthritica*, *lochialis*, and *lactea* (115.), particularly if we have not ſpeedy recourſe to the cure; for it generally occaſions death in a few hours.

118. The termination of the apoplexy alſo will vary according to the variety of its degrees (116. 117.). For in the firſt and ſecond degree (117.) there is ſtill ſome hope of a recovery. In the third ſpecies we may try what art can do, without promiſing any certainty of ſucceſs in ſo perilous a caſe. In the fourth degree we ſhould not even attempt the cure without previouſly declaring that the patient's death is inevitable. For Hippocrates has very properly obſerved:

"To reſolve the moſt violent degree of apoplexy is an impoſſibility, while the cure of the ſlighter kind is very doubtful *."

* Aph. 42. ſect. ii.

119. In general a very bad ſymptom is afforded by the ſnoring, and foaming at the mouth *: and the ſame thing is applicable to the difficulty of ſwallowing, and the regurgitation of the drink through the noſtrils. Every affection of the reſpiration gives reaſon for apprehenſion. But, as I have already mentioned from Morgagni (97.), we muſt not raſhly truſt to the reſpiration's remaining natural. That apoplexy, likewiſe, which ſucceeds to acute fever or epilepſy, or which takes place inconſequence of a metaſtaſis, generally proves fatal. A cold ſweat alſo breaking out all over the body, or in ſome part of it, forebodes an unfavourable event. The ſlighter, or partial ſpecies of apoplexy (86. 87.), portends leſs danger; but is frequently ſucceeded by palſy or weakneſs of ſome part.

* Hippocr. aph. 51. ſect. vi. aph. 43. ſect. ii.

120. Piles coming on in perſons ſtruck with apoplexy are attended with utility, according to the author of the *Coacæ Prænotiones* *. A fever coming on alſo occaſions a ſolution of the diſeaſe †. The following aphoriſm of Hippocrates likewiſe is applicable to this place: "Thoſe perſons in whom, while in good health, pains ſud-

denly take place in the head, and who immediately become ſpeechleſs, and fall a ſnoring, are cut off in ſeven days, unleſs a fever comes on ‡." But this prognoſtic requires ſome explanation. In order to reſolve the diſeaſe, the fever ought either to be an ephemera, which comes on at the beginning of the diſeaſe in the ſanguine or bilious temperament, or an acute one ſupervening in the phlegmatic temperament; and in both of them the fluids ought to remain within the veſſels. But if they have already burſt from their veſſels, and the diſeaſe has continued for ſome time, Duretus, in his Commentary, pronounces fever to be injurious, and he is ſupported by the *Coacæ Prænotiones* ‖. Puiatus § accedes to the explanation of Duretus, obſerving that the fever, in order to prove ſalutary, ought to come on early, and be violent, as an ephemera is, but not inflammatory. And he adds, that the fever, which, in the courſe of thirty years practice, he obſerved to ſupervene in ſuch caſes, was either inflammatory, and conſequently haſtened the patient's death, or too ſlight, or late, and therefore unavailing:—a fact which I myſelf can affirm to have frequently witneſſed.

* N. 478. † N. 479. ſect. ii. ‡ Aph. 5. ſect. vi. ‖ N. 480. ſect. ii. § *Letter. al Figlio inſertai nella Raccolt. d'Opuſcul. del* Calogera, vol. 50.

121. But partial palſies, nay, hemiplegia it-

ſelf, if ſenſation and heat remain, and nouriſhment ſtill goes on in the part affected, while the pulſe does not fall very much, give us great reaſon to expect a cure. But if the ſenſe and motion are loſt, and the arteries beat very languidly, while the inſenſibility is ſuch, that the part does not appear to belong to the body, it is a much worſe ſymptom. Laſtly, if the part is affected with cold, or if it becomes emaciated, ſuch a paralyſis is almoſt uniformly incurable. Van Swieten remarks, that this happens principally in the paralyſis which ſucceeds to the *colica pictonum* *. It not unfrequently happens, that, on account of the long-continued paralyſis of a muſcle, its antagoniſt prevails, and draws the limb to which it is affixed towards its origin, whence ariſes *contractura* and rigor †. But every contractura of a limb is not to be immediately derived from this cauſe. Paralyſed parts, during their waſting, ſometimes grow ſo dry, that the tendons of the muſcles and ligaments of the bones become ſhortened and rigid.

* L. c. § 162. † *Id. ib.* § 326.

THE CURE.

122. WHENEVER a phyſician is called to a perſon in a ſtate of apoplexy, his firſt care ought to be, to place the patient in a light, cool apart-

ment, raiſing the body pretty high in the bed, and laying the head bare, but carefully covering the feet, and letting them hang down, having previouſly looſened the cloaths about the neck, breaſt, belly, &c. He ought in the mean time to deliberate with himſelf, as far as poſſible, of what temperament, age, and habit the patient is; how he uſed to formerly live; as alſo what cauſes preceded the complaint, and what ones excited it, and, laſtly, what the ſtate of his ſtrength formerly was, and now is; and, in conſequence of weighing all theſe things, having aſcertained the ſpecies and degree of violence of the complaint, he ought without loſs of time to employ the treatment adapted to it.

123. In the ſanguine ſpecies of the complaint, which is recogniſed by its peculiar ſymptoms (99.), the blood, either from its too great abundance, or from its being too long detained in the head, proves hurtful by preſſing on the brain. It ought, therefore, to be immediately drawn, in conſequence of which, the quantity of the blood being diminiſhed, and its impetus blunted, what remains in the veſſels circulates with more freedom, and thus the brain is relieved. But it ought to be drawn liberally, and from a large opening, particularly if the patient be very plethoric, and in the prime of life. It is not eaſy to determine, in general, what quantity ought to be taken, as in this reſpect we muſt be regulated by

the patient's ſtrength, age, habit, ſex, and the country in which he lives, and particularly by the violence and ſtrength of the pulſe, and the redneſs of the face. Some authors are of opinion, that bleeding is inadmiſſible in phlegmatic and melancholic people, in perſons advanced in life*, in young people, and during pregnancy. But their opinion is oppoſed by the experience of Hippocrates †, Aretæus ‡, Cœlius Aurelianus ‖, and of almoſt all eminent phyſicians of extenſive practice.

* Lanciſi, in order to demonſtrate the utility of copious bleeding even in old age, makes mention of a merchant advanced in life, who was threatened with apoplexy, having been reſcued from the danger in conſequence of a ſpontaneous diſcharge of blood from the noſtrils, to the extent of eleven pounds, and having at length been intirely freed from the complaint by a farther diſcharge of four pounds, which took place in about fifteen days afterwards.

† *De Vict. Ration. in Acut.* ‡ *De Curat. Acut.* c. iv.
‖ Lib. ii. c. 10.

124. If, therefore, the patient's ſtrength is not defective, or only appears oppreſſed in conſequence of the exceſſive fulneſs of the veſſels, and the other ſymptoms indicate it, in a grown-up perſon we ought immediately to open a vein in the arm, and, if the perſon labours under hemiplegia, on the ſide oppoſite to that affected,—which, according to Aretæus*, and after him Valſalva and Morgagni†, is found to be attended

with more utility ‡,—and twelve ounces of blood, or, when the plethora is greater, eighteen ounces may be taken. Some patients bear a much greater loſs of blood without ſyncope coming on. Nor ought we to be deterred from bleeding by the intermiſſion or irregularity of the pulſe, unleſs other ſymptoms denote deficiency or reſolution of the vital powers, until the immediate danger appears to have been ſufficiently obviated. Some alſo, when the plethora is very great, and the brain is much oppreſſed, adviſe opening the veins of both arms, or in both feet, to occaſion revulſion from the brain as ſpeedily as poſſible. But this remedy ought to be practiſed only by a phyſician of the greateſt experience and circumſpection, leſt a fatal ſyncope cloſe the ſcene.

* *De Morb. Acut. Curat.* l. 1. c. iv. † *Epiſt. Anat.* xiii. n. 17. & *Anat. Med.* iii. n. 17.

‡ Mayn. Sim. du Pui, in his *Diſſertatio de Homine Dextero et Siniſtro*, recommends bleeding on the oppoſite ſide of the body in hemiplegia ariſing from an injury of the brain, although he denies that any decuſſation of the nerves takes place.

125. If the quantity of blood drawn at firſt does not prove ſufficiently ſerviceable, it may be again repeated in three hours, or even ſooner, if neceſſary. Some adviſe bleeding from the foot, others from the arm. But a careful conſideration of the circumſtances will beſt point out the moſt convenient place. The flowing or retention of the menſtrual, hemorrhoidal, or lochial diſcharge,

generally require our giving the preference to bleeding from the feet. We likewiſe learn from an author of the greateſt experience, that bleeding from the foot, and that too from the one which is paralyſed, in hemiplegia is very frequently of the utmoſt ſervice; becauſe "by this means the obſtacles giving riſe to convulſions and obſtructions, which remain firmly fixed in the veſſels of the injured part of the ſpinal marrow, or baſe of the brain, may be more eaſily and forcibly removed *." If the ſenſe and motion of the part ſtill do not return, or a pain remaining fixed in ſome part of the head denotes that the brain is not yet ſufficiently relieved, we muſt next have recourſe to opening the jugular veins, which is recommended by Freind †, Lanciſi ‡, and a great many others ‖, or to opening the temporal artery, which Heiſter propoſes §. Some, in like manner, when the jugular veins do not appear, or cannot conveniently be opened, propoſe bleeding from the frontal vein, or ſublingual ones; but in general this cannot be done without great inconvenience. Nor does Platner conſider this remedy as being attended with ſufficient advantage, in oppoſition to the opinion of Petrus a Caſtro, P. Salius Diverſus, and Lanciſi. But in the opening of the jugular and other veins which I have mentioned, if it ſeems proper to attempt it, we muſt be on our guard, as I have

elſewhere remarked (24.), againſt binding the neck with a bandage, to cauſe them to ſwell, leſt the return of the blood from the head being more and more retarded, ſhould increaſe the congeſtion in the ſinuſes and veſſels of the brain. We ſhould take care to cauſe the jugular veins to ſwell, merely by applying the finger, or to cauſe an intumeſcence of the ſublingual ones, by keeping warm water in the mouth before drawing blood from them.

* Lanciſ. *De Sub. Mort.* l. 2. c. v. § 3. † *Op. Omn. in* Hippocr. *Epid. Comment.* ii. *De Sang. Miſſion. &c.* p. 32. ‡ *De Sub. Mort.* l. 2. l. v. § 3. 4. || Trallianus, lib. 4. Actuarius, l. 3. c. 1. Fabric. Hildanus, cent. 4. 14. Alpinus, *Med. Ægypt.* and after them moſt of the modern writers. § *Compend. Med.* c. xiv. § xxxii. p. 296.

126. It is of the utmoſt ſervice alſo, after previouſly ſcarifying the ſkin deeply, to apply a cupping-glaſs to the occiput, and thus to draw blood, eſpecially when it has already been drawn copiouſly from other parts, or the ſtrength does not admit of its being taken directly from the veins; although, according to Morgagni *, it is ſtill not to be compared with veneſection from the arm or jugular vein. For the occipital veins, like the other ramifications of the external jugular, communicate with the venous ſinuſes of the membranes of the brain, particularly in early life. Merely by means of twice deeply ſcarifying the occiput, Zacutus Luſitani † recovered a

young man, whoſe " pulſe was ſo much reduced, that his death was expected hourly," and who was incapable of bearing other remedies. M. Ant. Cicognini, then one of the moſt diſtinguiſhed phyſicians in Æmilia ‡, when " labouring under an obſtinate and very difficult comatoſe affection," received great benefit from that remedy. Meade ‖ joins with Morgagni in commendation of this remedy, and aſſerts that it is attended with very great efficacy in the moſt dangerous fits of apoplexy, and that he had more than once experienced its great utility. But before their times this practice was conſidered by Aretæus § of ſuch conſequence, that he expreſſed himſelf, when ſpeaking of it, to the following effect: " When a diſeaſe, proceeding from an affection of the head, continues long, a cupping-glaſs ought to be applied to the back of the head, and by this means blood ſhould be drawn liberally: for it proves more ſerviceable than veneſection, and does not reduce the patient's ſtrength ¶."

* *Ep. Anat. Med.* 11. *art.* 10. † *De Med. Princ. Hiſt.* l. 1. hiſt. 33. ‡ Morgagn. *Adverſ. Anat.* vi. animadverſ. 83. ‖ *Monit. et Præcept. Med.* c. 2. § 1. §. *De Morb. Acut. Curat.* l. i. c. iv.

¶ But, according to Morgagni, no writer has given a fuller or more accurate account of this remedy than Walther, who has publiſhed a diſſertation *De ſcarificatione occipitis, plurium capitis morborum auxilio,* and has evinced its efficacy both by the obſervations of others and his own.

127. Others adviſe applying it, not to the occiput, but to the vertex, or ſinciput *, which Fracaſtor is ſaid to have performed with the greateſt advantage in treating a nun who had been ſeized with the complaint: although, when he was attacked with apoplexy himſelf, and could not make the by-ſtanders comprehend his meaning, he was obliged to remain without this aſſiſtance, having to no purpoſe pointed with his finger to the part to which the cupping-glaſs ought to have been applied †. Meade ‡, alſo, after Haly ‖, Foreſt §, and Schencke ¶, adviſes the application of cupping-glaſſes to the ſides of the neck. Nor is it unattended with utility to apply both dry and bloody cupping-glaſſes to other parts of the body alſo, excepting the back, that we may not farther check the motion ſubſervient to reſpiration, already too weak; although this does not ſeem to have been ſufficiently attended to by Dodonæus **, who has expreſsly recommended the application of them in that manner. But thoſe who recommend applying them in this manner, generally do not place the patient flat on his breaſt, but rather make him lie on one ſide, that the reſpiration may ſuffer leſs injury.

* Pet. Aponenſ. *in Complem. Meſ. de Morb. de Cerebr.* c. 17. Crato, conſil. 36. 37. Sennert, l. 1. *Pract.* P. ii. c. 33. fol. 680. *b.* Gr. Nymann, *De Apopl.* c. 39. p. 229. † *In vita* Fracaſtorii, *verſ. fin.* Heurnius, c. 24. *De Affect. Capit.* p. 270. ‡ *Monit. et Præcept. Med.* c. 2. ſect. 1. ‖ L. 3.

Aphor. § L. 10. *Obſervat.* 76. *in ſcholio.* ¶ L. 1.
obſ. 149. ** L. 2. *Prax.* c. 15.

128. With the view of diminiſhing or drawing the blood elſewhere, leeches may be applied, not only to the temples and behind the ears, as I have already recommended for the cure of headach, but likewiſe to the anus, particularly if the complaint has proceeded from ſuppreſſion of the hemorrhoidal or menſtrual diſcharge, or from affections of the *hypochondria*. They will likewiſe be ſerviceable when the complaint is occaſioned by other cauſes; particularly when other veins cannot be opened conveniently or ſafely. But in that caſe they ought to be applied to the whole body, or at leaſt to a variety of different parts of it, that a copious effuſion of blood may be occaſioned. In children, corpulent people, women, and weakly perſons who are afraid of being bled, the inner part of the arm is ſuppoſed to be beſt calculated for the purpoſe.

129. On the whole, it is eſtabliſhed, as a general maxim, That after drawing blood from parts in the neighbourhood of the head, the veins of the inferior joints ſhould be opened, to produce revulſion. But a perſon, when about to let blood, is frequently a good deal ſtaggered by the obſervation of Celſus, "That if all the limbs be violently paralyſed, bleeding either proves fatal, or relieves the patient *." I ſhould

interprete the obſervation by ſaying, that bleeding occaſions death, when the diſeaſe proceeds from an effuſion of blood within the cranium or brain, or from an hydropic collection, and that it relieves the patient when the collection of blood remains ſtill within the veſſels, by which means both the veſſels and the brain may be emptied and relieved. Hence he very appoſitely ſubjoins: "After the bleeding, if ſenſe and motion are not reſtored, no hopes remain; if otherwiſe, the health is reſtored along with them.

* Lib. iii. c. 27. n. 20.

130. After drawing blood, it is neceſſary to purge the belly by means of a clyſter, though not a very acrid nor warm one, that ſpaſms may not be excited in the lower part of the belly, which would propel the blood more and more towards the head;—a raſh practice which too commonly prevails. Having by this means drawn off the groſſer excrements, if the patient ſtill retains the power of ſwallowing, antiphlogiſtic cathartics ought to be adminiſtered, in order to excite a ſlight diarrhœa, which generally proves very ſerviceable in all diſeaſes of the head. But when the apoplexy is very violent, as the ſphincter ani frequently becomes paralytic, and the power of ſwallowing is loſt, in that caſe a paſſage ought to be ſolicited by means of a peſſary. If it proves fruitleſs, the ſmoke of tobacco may be injected up the inteſtines, to excite the

periſtaltic motion; but if the fumes of charcoal, or the abuſe of tobacco, or other noxious effluvia (85.), have induced the complaint, ſuch a remedy would be to the laſt degree pernicious But if there be a neceſſity for employing it, the phyſician muſt conduct himſelf with the utmoſt circumſpection, that the languid nervous influence may not be completely extinguiſhed by its narcotic quality *. A weak decoction or infuſion of tobacco-leaves ſeems to be ſafer than the ſmoke.

* Vid. Baſſian. Carminat. *De Animal. ex Mephit. et Nox. Halit. interitu, &c.* l. 3. c. 2. p. 174. 175. 176.

131. There is ſcarcely any diſeaſe in which medical men act more decidedly than in apoplexy, employing every means to rouſe the patient from his ſtupor. Not a few, guided in their opinion chiefly by the authority of Riverius and Van Helmont, with this view adopt the indiſcriminate employment of emetics, keeping in view the maxim of Celſus, "That it is better to make trial of a doubtful remedy than none at all," in a caſe which is almoſt deſperate. But I would have them recollect, that many circumſtances contra-indicate the employment of emetics, namely, obeſity, a ſhort, thick neck, a narrow cheſt, a large belly, plethora, a tendency to the vomiting or ſpitting of blood, organic injuries of the lungs and præcordia, any ſevere affection of the eyes, weakneſs of the head, great tumours of

the neck, particularly of the thyroid gland, enetrocele, or tumour of the umbilicus, gravid uterus *, an ulcer or ſcirrhus of the ſtomach, a particular idioſyncraſy, by which a perſon is not eaſily made to vomit, old age and decrepitude, the particular climate, and its being the winter ſeaſon †. Beſides, nobody in his ſound ſenſes will deny that it is attended with the greateſt danger to excite vomiting in that ſpecies of apoplexy which is occaſioned either by the exceſſive diſtenſion, or rupture, or corroſion, of the blood-veſſels of the brain. For who does not know, that, in conſequence of vomiting, the blood is propelled more copiouſly and forcibly to the head, and that its return from thence is impeded; ſo that the veſſels become more and more turgid, and though they may perhaps have remained hitherto uninjured, are more apt to become ruptured; while, if they have already been lacerated, in conſequence of the enlargement of the wound, they pour out the blood in greater quantity? Moreover, during the effort of vomiting, the diaphragm, heart, and lungs, which are already almoſt in a ſtate of palſy, muſt neceſſarily become oppreſſed, and the patient, in conſequence of the ſuppreſſion of the reſpiration, be immediately ſuffocated. I have more than once myſelf obſerved with regret, a hemiplegia, or ſlight and partial apoplexy, in conſequence of an emetic having been given, paſs into a violent and univerſal

one, and the more ſevere ſpecies of the complaint in a few hours terminate in death. I am aware that the ſticklers for this decided practice, who are very numerous in this country, record inſtances of the efficacy of emetics in apoplexy. But we are not intitled to infer, from a few ſucceſsful inſtances, which perhaps were more owing to the vigour of the patient's conſtitution than the efficacy of the practice, that emetics are not pernicious of themſelves, as I have repeatedly had an opportunity of aſcertaining the fact ‡.

* Certain modern practitioners, particularly thoſe who have been educated on the other ſide of the Alps, without heſitation propoſe giving emetics to pregnant women, ſuppoſing, I imagine, that as they bear the vomiting which proceeds from pregnancy, they will be able, without inconvenience, to ſuffer that which is excited by art. But they ought to recollect, that not a few women, during pregnancy, on account of frequent and diſtreſſing vomiting, have ſuffered abortion. I am not therefore induced by their authority and temerity, not to believe that it is by far ſafer for pregnant women to abſtain from emetics properly ſo called.

† Hippocrat. aph. 4. ſect. iv. where he ſays, "In the ſummer-time vomiting is to be preferred to purging, but not ſo in the winter-time."

‡ I ſhall not, however, pretend to be ignorant, that in the diſeaſe deſcribed by Lanciſi, not only cathartics turned out well, becauſe then both the maſs of blood and the hypochondres abounded with a great quantity of bilious, acrid particles, but alſo emetics, as he himſelf affirms, when he ſays, "Vomiting likewiſe proved ſerviceable in thoſe perſons who

had been accuſtomed to it, as well as in thoſe who laboured under the weight of an undigeſted ſupper." L. c. l. 2. c. v. § xiii.—But the injuries which they occaſion ſeem to be more certain, and the relief they afford doubtful.

132. With regard to the experience of Riverius and Van Helmont, it does not ſeem to be ſuch as to demonſtrate that emetics are calculated for every kind and degree of apoplexy. Nor does the maxim of Celſus hold ſo uniformly, that we ſhall not be intitled to reject it whenever it is repugnant to reaſon. In the ſanguineous ſpecies of apoplexy, therefore, all emetics, particularly the active ones, ought to be avoided, as not being indicated, and proving hurtful, in conſequence of which they have been exploded by judicious phyſicians, and particularly by Morgagni. They are likewiſe inadmiſſible in the convulſive ſpecies of the complaint, and particularly in ſenſible and irritable habits, leſt they ſhould aggravate the ſpaſms more and more. But if they are ever admiſſible, we may probably give them, along with Baglivi and Heiſter, in that ſpecies of the complaint which has been occaſioned by exceſſive fulneſs of the ſtomach, intemperance, poiſoned food, or opium taken a little before; although in apoplexy accompanied with a full ſtomach, as that one is which attacks after eating, Morgagni ſuſpects the propriety of emetics, adducing an inſtance of a perſon labouring under hemiplegia, who, in conſequence of an emetic,

was hurried into an univerſal apoplexy, which ſhortly proved fatal *. Nor muſt they be attempted before previouſly diminiſhing the quantity of the blood, if plethora be preſent. It frequently happens alſo, that unſkilful phyſicians decide the propriety of preſcribing an emetic, from the circumſtance of the vomiting or nauſea, which precedes or accompanies the complaint, notwithſtanding that the vomiting or nauſea is a ſympathetic affection proceeding from that of the brain †; a diſtinction which becomes abſolutely neceſſary. For in the former caſe it is altogether neceſſary to abſtain from emetics, as being highly pernicious.

* *Epiſt. Anat. Med.* iii. n. 4.

† Two caſes communicated by my ingenious friend Felix Perger, in two letters, the one addreſſed to Störck, the other to Profeſſor Menghin, apply well to this place; as in them he ſhews the impropriety of employing emetics in the caſe of vomiting ariſing from an injury of the brain.

133. Nor is any kind of revellent or exciting means left untried to rouſe the patient from his lethargy. The beſt method of deriving the blood from the brain and head is immerſing the patient's feet in the tepid bath. Likewiſe revulſion is occaſioned, and ſenſation and motion increaſed, by binding the limbs with ligatures, by friction, epiſpaſtics, ſinapiſms, and bliſters *. Some recommend burning the ſoles of the feet

with hot iron, or pricking the palms of the hands with needles, or forcing pins under the nails, by means of which apoplectic patients are ſaid to have been ſometimes excited who could not have been rouſed in any other way. But I can ſcarcely be led to ſuppoſe that any good will be obtained by tormenting the patient in this manner, and that the proximate cauſe of apoplexy is not thus removed, when the other remedies have been inadequate to produce that effect. For the good effects of this remedy, or rather torture, adduced by Lanciſi † from Miſtichell, Claudini, Fideli, and Henricus ab Heers, either are not of that kind which demonſtrate their certain utility, or I am inclined to think, that in comatoſe affections, falſely conſidered as apoplexy, they would have been produced without having recourſe to theſe tortures, if the phyſician had waited with patience. But in the ſanguineous ſpecies of the complaint, thoſe remedies are inadmiſſible which accelerate the circulation of the fluids, or occaſion exceſſive motion. Hence ſternutatories and acrid volatile remedies are conſidered as being of ſo ſuſpicious a nature, that they ought not to be employed without the prudent conſideration of all the particulars of the caſe, and the moſt ſcrupulous circumſpection ‡. If it is allowable to apply any thing to the noſtrils, it may be vinegar, or oil of amber, or its volatile ſalt, or ſpirit of baum, with which both the tongue and mouth,

and torpid limbs may be rubbed. Thoſe things, again, may be given internally which are diluent, correcting, and gently reſolving, as whey, the decoction of barley, an infuſion of teil-flowers, with nitre and oxymel, and the like.

* L. c. c. v. § xii.

† Tiſſot is ſo averſe to every kind of acrid ſtimulus and medicine accelerating the motion of the blood in the cure of apoplexy, that he pronounces even bliſters to be unſafe, and affirms, that, with a view to producing revulſion, more advantage is to be derived from the application of cataplaſms of fermenting bread and muſtard-ſeed to the calves of the legs after the previous employment of ſoft fomentations. *Epiſt. Var. Arg. ad* Haller, p. 65. *Ed. Venet.*

134. If by theſe means we rouſe the patient, while the reſpiration, pulſe, and former heat and colour return, there is reaſon for entertaining good hopes. The patient ſhould then be allowed weak broths, in which have been boiled cooling herbs, as baum, primroſe-flowers, thoſe of lillies of the valley, tunica and teil-tree, together with ſome of thoſe things which are more powerfully attenuant, diſſolving, and exciting, and promote the diſcharge by the ſkin and kidneys, as amber and its volatile ſalt, diaphoretic antimony, antimoniated nitre, camphor with nitre, cinnabar well waſhed and ſublimed, and ſo forth.

135. In the ſerous ſpecies of apoplexy, as recogniſed by its peculiar marks (100. 101. 102.), phyſicians are not a little divided in their opinion

concerning the letting of blood. In this caſe, however, I am guided by a diſtinction which is generally adopted by the ableſt practitioners. If the patient is ſtill of a good habit, if both fulneſs of the veſſels, and a certain abundance of red blood, ſeem to concur, which may be learnt from the greatneſs of the pulſe, the nature of the food, and the patient's manner of life, I am of opinion, with Morgagni and others, that a vein may be cautiouſly opened*, that at leaſt one of the cauſes oppreſſing the brain may be quickly removed. On the other hand, if the complaint is combined with a bad habit of body, or gives occaſion to a cachexy, while no marks of plethora are preſent, bleeding muſt be avoided †. Likewiſe, if the brain labours under dropſy, and it is ſuſpected that there is a very conſiderable collection of water in it (50. to 53.), while the veſſels contain little and poor blood, we muſt abſtain from it, becauſe, in conſequence of bleeding, not only is the dropſy confirmed, but frequently occaſioned; and we ought rather to have immediate recourſe to ſtrengthening means, both internal and external. It is likewiſe injurious to bleed in the caſe of weakly people, thoſe far advanced in life, who have been long troubled with, and much reduced by, a chronic complaint in the head, or when the patient has been attacked with apoplexy in conſequence of the copious drinking of medicated waters ‡.

* *Epiſt. Anat. Med.* iv. n. 10. ‡ *Ib.* n. 15. † *Ib.*

136. Cupping-glaſſes and leeches are employed with greater ſafety, although they do not cure the complaint ſo quickly and powerfully. Purging is attended with ſtill leſs danger, and more advantage. Moſt authors in this ſpecies are warm in their recommendation of emetics; which, although they are not to be ſo much dreaded as in the ſanguineous ſpecies, muſt not be conſidered as altogether harmleſs, and therefore are not to be employed indiſcriminately, or too haſtily. Nor, becauſe apoplexy is frequently preceded by, or accompanied with vomiting, or a deſire to vomit, ought we to infer that theſe motions of nature are ſalutary, and therefore to be promoted; for they generally proceed, as I have already ſaid, from the brain being affected and vellicated, and not from a colluvies in the *primæ viæ*. It is better, therefore, to attempt that by means of cathartics of the claſs of hydrogogues, which others generally endeavour to effect by emetics. Agaricus, jalap, diagrydium, ſenna-leaves, manna, ſal Anglicum, cream of tartar, the *pulvis Cornacchini*, the pilulæ de ſuccino Cratonis, the *pilulæ de tribus* with rhubarb, ſweet mercury, and the like, frequently afford remarkable relief. On the ſame account, likewiſe, I recommended active injections (to which ſome add emetic wine), and all thoſe medicines which powerfully draw off the ſerous fluids by the bowels or kidneys.

137. Thoſe remedies alſo are very proper which, by their irritation, occaſion pain, and excite the ſolids, which are in a ſtate of torpor (133.), or form a new outlet for the redundant ſerum, as the ulcers occaſioned by the employment of cantharides, ſetons, and iſſues. Under this head come, warm and acrid volatile remedies, taken both internally and externally, as the alkaline volatile ſalts, ſpirit of ſal ammoniac, of ſoot, hartſhorn, human blood, ſpiritus folliculorum ſerici, and the like; above which may be drunk, warm infuſions of the decoctions of marjoram, ſage, betony, lavender, and roſemary. There is need of caution, however, leſt, by the exceſſive and too bold employment of calefacient remedies, we excite, not an ephemera, but a very violent and ardent fever, or an alkaleſcent diſſolution of the fluids, by which the patient's death may be haſtened. All the remedies, therefore, muſt be cautiouſly adapted to the patient's temperament and habit of body, and to the peculiar condition and acrimony of the blood, as well as to the age, ſex, ſtrength, and preceding diſeaſes.

138. Nor is there occaſion for leſs care when we proceed to the treatment of the convulſive ſpecies of the complaint (95. 103. 104. to 119.). In the apoplexy in which the brain is idiopathically affected, it is clear, that, according to the nature of the different cauſes irritating and preſſing upon the origin of the nerves, thoſe remedies

are to be employed of which mention has been made in the treatment of the ſanguineous and ſerous ſpecies, obſerving the ſame cautions and precepts which I have already repeatedly inculcated. In the ſympathetic ſpecies, however, after taking as much blood as ſhall appear proper in patients of the ſanguine and choleric temperament, and who are not accuſtomed to ſuch evacuations, we muſt in general avoid, both internally and externally, all remedies which are too acrid and irritating, particularly when the ſenſibility of the nerves is exquiſite. On the other hand, we may employ tepid bathing and fomenting of the feet, emollient injections, and the milder kind of cathartics, as the oil of ſweet almonds, olive, lintſeed, or caſtor oil, magneſia alba, caſſia-flowers, and whey, which relax the ſpaſms, allay the ſenſibility and irritability, correct the acrimony of the fluids, and very gently remove the colluvies from the inteſtines. Nor are the cooling and antiſpaſmodic remedies without their uſe, of which the chief are, the volatile ſalt of amber, the ſuccinated liquor of hartſhorn, the tincture of amber, ſaffron, and caſtor, the *liq. anod min.* of Hoffman, and flowers of zinc, which are celebrated by Gaubius, and others of the moderns, on account of their ſedative and antiſpaſmodic power, Homberg's ſedative ſalt, water of orange-flowers, the rediſtilled water of green nuts, pepperminth,

and black cherries, the aqua epileptica of Langius, the *aqua hyſterica* of Quercetanus, muſk, camphor, and the like, which muſt be judiciouſly adapted to the patient's temperament, age, conſtitution, the ſeaſon, and cauſes of the complaint. It is particularly neceſſary, however, to inquire into the origin of the complaint, by which the cure ought to be intirely regulated.

139. From this threefold method of treatment, adapted to the three more remarkable varieties of apoplexy, it is an eaſy matter to infer what remedies are ſuited to the other ones, which are variouſly combined. For it ſeldom happens that ſimple diſeaſes, ſuch as they are deſcribed by pathologiſts and noſologiſts, are met with in practice, but they are generally ſuch as are variouſly modified. Hence it happens, that in order to be able to form a juſt diagnoſis, and adopt a rational method of treatment, the practitioner muſt be poſſeſſed of ſound judgment, and muſt frequently beſtow the deepeſt reflection on the ſubject. On the whole, the cauſes of the complaint muſt be kept in view, and we muſt endeavour by all means to remove the original diſeaſe. Thus, in the *ſymptomatic* apoplexy, as the ſpecies named *febrilis*, *ſcorbutica*, *præcordialis*, *venerea*, and ſo on (82. 91. 94. 95.), we ought to found our expectation of the cure upon the knowledge and removal of the primary complaint from which it has proceeded.

The *apoplexia metaſtatica* requires every kind of revulſion and evacuation, particularly promoting the diſcharge by the kidneys and ſkin. That ſpecies which has been occaſioned by a blow, wound, contuſion, or fall, depends for its cure principally on the aid of ſurgery. The depreſſed part of the bone muſt be raiſed by employing the trepan; and the fractured part muſt be removed, to free the brain from the preſſure, or in order that the effuſed blood may be drawn off. Trepanning may alſo be employed if there is reaſon to apprehend that the internal veſſels have become ruptured, although the ſkull remains uninjured, or an abſceſs or tumour exiſts within it. But then the affair is intirely to be effected by the ſkill of the ſurgeon. It is alſo ſuperfluous to ſay more concerning what the phyſician ought to do when the apoplexy has been occaſioned by tophi and venereal exoſtoſes. For the patient's recovery intirely depends upon a courſe of mercury, or in ſome caſes on a very ſtrong decoction of ſarſaparilla, or guaiac.

140. Laſtly, that ſpecies of the complaint which proceeds from the fumes of charcoal and deleterious halitus requires that the patient ſhould immediately be brought out to the open, cold air; and next, after frequently ſprinkling the face with cold water, letting of blood copiouſly from one or other of the jugular veins. Injec-

tions of cold water and vinegar ought to be thrown in. Volatile ſubſtances ſhould be applied to the noſe. Some vinegar ought to be dropped into the mouth and fauces, but with caution, that it may not paſs into the glottis; and, on the patient's coming to himſelf, it may be occaſionally given mixed with his drink; while the whole body ſhould be rubbed with frictions kept up for a long time. Portali * recommends, as a remedy of the greateſt utility, the blowing in of air by means of a flexible tube introduced into one noſtril, while the other is compreſſed with the finger; and, as a laſt remedy, he even propoſes tracheotomy. He thinks that this method of inflation is to be preferred, from having obſerved, that if it is introduced into the mouth, either the epiglottis is depreſſed, and thus the acceſs of the air to the larynx obſtructed, or that it is forced into the œſophagus. He rejects emetics as pernicious; nor is he leſs averſe to the introducing of the ſmoke of tobacco into the inteſtines. For he thinks that the inteſtines, when inflated with it, ſo far from exciting the motion of the diaphragm, which is our object, violently oppoſe it. But we have ſhewn, moreover, that he ſuſpects that this remedy is pernicious, from being capable, in conſequence of its narcotic quality, of aggravating the diſeaſe, and accelerating the patient's death.

* *Hiſt. del' Acad. Roy.* an. 1775. *vid.* alſo *Giornale de Piſa*, T. 39.

141. But if the having ſwallowed or taken poiſons by miſtake, particularly narcotic ones, has occaſioned apoplexy (85.), they ought to be expelled immediately, by exciting vomiting. But nothing after vomiting is ſuppoſed to be more efficacious in correcting the effects of every narcotic poiſon, than vinegar and the acid juices of fruits. It is likewiſe proper to employ them in thoſe caſes in which the diſeaſe has been occaſioned by the eating of poiſonous muſhrooms. But in thoſe apoplexies, and in the apparent death which is occaſioned by the vapour of fermenting bodies, and the noxious effluvia of common ſewers, volatile alkali is warmly recommended by Le Sage, one of the Pariſian Academicians, whoſe experiments have been collected by Le Noir, and publiſhed with the view of confirming its very great efficacy. Nor is it ſurpriſing, as all thoſe things which recall the ſenſibility and irritability likewiſe rouſe the vitality when almoſt extinguiſhed, not, as he ſuppoſes, that the volatile alkali oppoſes the acidity ariſing from them,—for likewiſe acid vapours and ſpirits afford the ſame benefit,—but that, by means of its ſtimulating and irritating power, it rouſes the nervous influence and torpid irritability of the heart.

142. When the diſeaſe begins to remit, we ſhould

endeavour to overcome the remains of it, and to remove the partial paralyſis which is generally left, by correcting the cauſes. It will therefore become neceſſary to continue a conſiderable time in the uſe of attenuant, reſolving, and evacuant remedies. Under this head come, the ferulaceous gums; purgative extracts, as the panchymagogue of Crollius, or black helebore; ſweet mercury; decoctions of the diaphoretic woods, as they are called, as guaiac, juniper, ſaſſafras, miſletoe, maſtich, the roots of ſarſaparilla, burdock, bark, and madder; viper ſoup *; ſuccory; cephalic or antiſcorbutic plants boiled in whey; the hot bath, and the pouring of warm water on the patient; lotions of the ſame; ſtimulant, penetrating, volatile liniments, among which the *oleum formicarum* holds no inferior rank; mercury †, electricity ‡, tried with caution ‖, exerciſe, riding, and change of air. Not long ſince Collin greatly extolled the flowers of the *mountain arnica* of Linnæus, affirming that they poſſeſs a wonderfully reſolving and exciting property in the cure of palſy §. I muſt not here omit to mention a fact which is univerſally obſerved to occur, namely, that in hemiplegia the feet and legs ſooner recover their motion than the arms and hands, although nearer to the brain and heart. Hippocrates ¶ derived this from the *ſtraightneſs of the veins*. But it is more probable that the nerves proceeding from that part of the ſpinal

marrow which is fartheſt ſituate from the ſeat of the diſeaſe, ſuch as the *crural nerves* are, if I miſtake not, ſooneſt recover their power.

* In here enumerating theſe various kinds of remedies, I do not wiſh any one to ſuppoſe that they ought to ſucceed one another, or be employed without a judicious ſelection. I take it for granted that the reader is already acquainted with their nature and powers from the *Materia Medica*, together with the cautions preſcribed in the general doctrine of therapeutics for the proper employment of them. Thus, when I mention viper-ſoup, I do not affirm that it is a remedy calculated for every ſpecies of paralyſis, from whatever cauſe it proceeds; but I require that the practitioner, after conſidering the cauſes of the complaint, the patient's conſtitution, and the nature of the indicantia, ſhould deliberate well with himſelf whether it is fit for fulfilling the indications. The ſame thing I ſhould wiſh to have underſtood of every other remedy. Authors are not agreed as to the nature of the medicinal powers poſſeſſed by vipers, and as to the effects which they produce in the human body. Some are of opinion that they abound with volatile ſalt, in conſequence of which they agitate and heat the blood, excite the vital power, increaſe motion, attenuate the fluids, and diſpoſe them to alkaleſcence; while others, denying all this, affirm that nothing of a volatile and active principle is extracted, but much viſcid and glutinous animal mucilage; and that therefore an inſipid, mucous, and ſluggiſh ſoup is made from them, intirely ſimilar to that made from eels. Hence the firſt ſet rank it, on account of its exciting and heating power, among the more active remedies, and are not a little apprehenſive of employing it from its volatility: while the other ſet turn their fears into complete ridicule, conſidering it as an inert, and frivolous, and highly contemptible remedy. It has not, however, loſt its character in every country, particularly in Italy, where it has been held in great eſtimation from the earlieſt times; doubtleſs in conſequence of the ſucceſs

which practitioners have found to attend its employment. Add to this, that from various experiments of Beccaria (*Inſtit. Scient. Bon. Com.* T. ii. P. i. p. 95.) it has been aſcertained, that in vipers there is nothing either of volatile ſalt, or of any other heating principle, which ſhould give reaſon to ſuſpect the propriety of employing them, but, on the contrary, a very bland, gelatinous, fine juice, extremely nutritious, which ſoftens the rigid fibres, and which is calculated to be attenuated by the motion and heat of our body, and hence pervading all, even the moſt minute veſſels, gently diſſolving the viſcid ſerum and ſluggiſh lymph, without ſtimulating the ſyſtem, removing obſtructions, promoting all the excretions, and particularly the cutaneous perſpiration; in conſequence of which effects, a ſlender and emaciated habit becomes plump, acquires a more agreeable appearance, and colour, together with greater ſtrength and agility, and the ſyſtem is purged of the hurtful, ſalt, acrid, recrementitious matter contained in it, through the pores of the ſkin, and by the urinary paſſages. Why then ſhould not this remedy prove ſerviceable in paralyſis? He, moreover, grants, that viper-ſoup ſometimes occaſions fever, aggravates the heat and thirſt, and induces watching; but that all theſe effects are not to be aſcribed to the native properties of the remedy, but rather to a peculiar rigidity of the ſolids, or to more exquiſite ſenſibility, or to the acrimony of the fluids, which, when mixed with the gelatinous liquor of the vipers, and carried to the more internal and ſenſible parts of the ſyſtem, occaſions all theſe commotions. But let us grant that viper-ſoup poſſeſſes an exciting, diſſolving, and calefacient property, might we not on this very account derive much advantage from it in paralyſis accompanied with languor of the vital motions, laxity and ſluggiſhneſs of the parts, an almoſt cachectic habit, or the body being almoſt exhauſted of fluids, while the lymph, which moiſtens the nerves, is at the ſame time cold, ſluggiſh, and viſcid? Tiſſot himſelf,—who is ſuch an enemy to this remedy, that he thinks it might be expunged from the Materia Medica without any loſs,—owns that it may prove

ſerviceable in diſeaſes proceeding from a deficient quantity of healthy fluids, and when the blood is of a mucous, vapid, and aceſcent nature. *Epiſt. Var. Arg.* p. 105. 106.

† Waldſchmid, according to Allen, in his *Synopſis*, § 347. has recommended both the internal and external uſe of mercury in the cure of palſy. It has been recommended likewiſe by Barbetta, but to the extent of exciting ptyaliſm, by which he affirms that apoplexy may be cured (*De Apoplex.* c 2. note *c.* p. 31.). But this remedy was eſteemed of ſuch value by Bertini, that he employed it not only to cure apoplexy and palſy, but alſo to prevent them (*Dell' Uſo dell' Mercur.*). And a ſimilar opinion is entertained by his former pupil Ghis, now a celebrated phyſician at Cremona, who preſcribes the employment of cathartic mercurial pills, which he is in the habit of uſing, but more prudently than others, as he confines their praiſes only to the cure of the ſerous and phlegmatic apoplexy and palſy: contrary to the practice of Rotari, that unqualified admirer of the employment of mercury, who without heſitation has propoſed it in both kinds of apoplexy and palſy.

‡ *Comment. de Reb. in Scient. Natural. et Med. geſt.* vol. ii. p. 636. 637. vol. iii. p. 467. vol. iv. p. 69. 299. vol. vi. P. ii. p. 316. and elſewhere; although Nolletti does not ſubſcribe to the opinion.

‖ The effects of electricity obſerved to take place in the human body by Tiſſot are, 1. Acceleration of the pulſe; 2. increaſed heat, and plethora; 3. fuller expirations, ſometimes looſeneſs of the belly, and a copious diſcharge of urine; 4. various hemorrhages, particularly of the noſe; 5. pain of the part which is touched, injury of the ſkin, and involuntary contraction of the muſcle; 6. a convulſive ſhock, ſubſequent debility of the head, vertigo, anxious and diſturbed ſleep; 7. laſſitude; 8. anxiety at the cheſt; 9. ſometimes univerſal palſy, and death; 10. its proving fatal, like lightning; 11. the veſſels of the brain being found, after death, turgid

and dilated; 12. the ſame and more ſevere ſymptoms occurring in animals killed by electricity, with an effuſion of blood in the brain and heart: *Epiſt. Var. Arg.* p. 107. 108. *et ſeq.* Hence he inquires, what will be the uſe of electricity in paralyſis? and replies to himſelf by obſerving, that it has been ſerviceable in the palſy occurring in gilders. It will prove ſerviceable in the paralyſis proceeding from the *colica ſaturnina;* for in both caſes fever, plethora, and vitiated ſtates of the brain, are abſent, which conditions, he thinks, are neceſſary for employing it with advantage (*Ib.* p. 109.). It is proper to obſerve, however, that the medical effects of electricity vary according to the different manners in which it is employed. Its employment is threefold; namely, either that which is intirely ſimple, or which is attended with the extraction of the electrical ſparks, or with the exploſion of the Leyden phial. I am generally in the habit of employing the firſt or ſecond method, ſatisfied with charging the patient with electricity for a conſiderable length of time. I very ſeldom uſe the third method; and when I do ſo, it is with the utmoſt caution. Puiatus, Veratti, and other Italian phyſicians, employed a pretty ſimilar method, without ever experiencing any bad effect at leaſt of conſequence. Beccaria alſo, when aſked his opinion on the ſubject, recommended the more gentle method (*Conſult. Med.* T. i. conſ. 63. p. 161.). It is with very great pleaſure that I have of late obſerved this ſame method, which may be ſaid to be of Italian origin, adopted by Mauduyt, a French phyſician of celebrity, in a letter replete with ſound doctrine and medical knowledge, which is to be found in the *Medical Journal of Paris*, T. 49. *Menſ. Jun.* p. 509. *et ſeq.*

§ Vid. Joſ. Collin. P. iv. *Obſerv. Morb. Acut. et Chron. &c.*

¶ *Lib. Circa Morb. Virgin.* n. 2.

143. In the Philoſophical Tranſactions *, we read an account of a paralyſis of the palpebræ, which returned every night, having been cured

by the dropping of water on the back of the neck and occiput. With this view, the hot ſprings of Aponus, Luca, Piſa, Caſſino, Viterbo, Aquapendente, &c. are recommended here in Italy. For removing a palſy of the tongue, Langeus † prefers to all other remedies the diſtilled oil of cinnamon, and recommends applying to the parts affected a bit of ſugar on which a few drops of this oil have been poured. With the ſame intention, my former preceptor, and predeceſſor in the Clinical Chair, Lawrence of Bologna, chief phyſician to Pope Benedict XIV. uſed to cauſe the tongue to be rubbed with the ſpirit of black cherries. A good many other authors affirm, that the power of ſpeech has been frequently recovered in conſequence of drawing blood from the ſublingual veins ‡. It is likewiſe attended with benefit to ſtimulate paralyſed parts with ſcourges and nettles; or they may be advantageouſly expoſed to the vapour of burning ſpirits of wine ‖, in order to call forth the ſweat, particularly in corpulent people. Likewiſe the immerſing of the limbs in new wine, and fomenting them with it, is pretty ſtrongly recommended. For all the veſſels and fibres are gently ſtimulated by the heat and pungent vapour exhaled by the fermenting wine. Tiſſot, although he aſſerts that it frequently proves nugatory, is obliged, from experiencing its efficacy,

to confeſs that it has occaſionally been attended with advantage §. It frequently happens that the legs and feet of ſcorbutic people are liable to *pareſis*, or a peculiar and imperfect paralyſis; to paſs over that one which ariſes from a fall, blow, wound, or luxation of the vertebræ. In attempting its cure, every perſon knows that we muſt have recourſe to antiſcorbutic remedies. Thus the paralyſis of the lower extremities, which ſucceeds to venereal complaints, and which is of pretty frequent occurrence, ought to be oppoſed in conjunction with the primary complaint, of which it then clearly appears to be a ſymptom. I have frequently had occaſion to treat this ſpecies of palſy, and I have removed it by means of gently rubbing in mercurial ointment, and diaphoretic decoctions. Houſtet likewiſe removed a palſy of the bladder, anus, and legs, which had proceeded from the venereal virus, by the rubbing in of mercurial ointment ¶. Moreover hiſtories of palſies, unconnected with any venereal taint, having been cured by means of mercury, are recorded: the moſt remarkable of which ſeems to be that one publiſhed a few years ago by Cavalli **.

* N. 449. § 4. † *Miſcel. Veritat.* Faſcic. c. 1. § 8. ‡ Among thoſe is Lanciſi, who, ſpeaking of a perſon labouring under hemiplegia, deprived of the power of ſpeech, obſerves: "The aphonia, which could not be removed by the injection of clyſters, the exhibition of volatile ſalts, and the ap-

plication of blisters to the thighs, arms, and nape of the neck, was surprisingly and suddenly removed by one bleeding from the sublingual veins.

‖ Barbeirac. *Formul. Medican.* p. 362. § *Epist. Var. Arg.* p. 104. ¶ *Mem. de l' Acad. Roy. de Chir.* T. iv. p. 141. ** *Storia d' una Reumatica Paralisia Curata coll' Unzion. Mercuriale. Venez.* 1767.

144. Nor must I omit mentioning the case of two persons, who, after having become paralytic in consequence of the noxious exhalations of quick-silver, were completely cured by means of the *aurum fulminans* *. In the last place, the *spurious* species of paralysis (92. 93.) cannot be better treated than by selecting and adapting our medicines to the variety of the causes by which it has been induced. Hence deobstruent, anti-scorbutic, resolving, purifying, antiseptic, volatile, restorative, strengthening, and stimulant remedies, and such as I have already enumerated, (137. 142. 143.), will be proper; while we must pay particular attention to the rules laid down in pathology, and general therapeutics.

* *Gazzett. Medic. di Venez.* n. 11. ann. 1763, *di P. Ortes-chi.*

145. It frequently happens, as I have already (92.) observed, that, after the removal of the complaint, the patient is incapable of extending the fingers and other parts, because the ligaments of the joints and the flexors, on account of

having remained ſo long unſtretched, and become ſhorter, have acquired ſuch rigidity, that the power of the extenſors cannot overcome their contraction. We muſt then have recourſe to the mildeſt and moſt emollient remedies. But the moſt efficacious method of mollifying and elongating ſuch contracted and rigid parts, is the immerſing them into the belly of newly ſlaughtered animals, and keeping them there as long as the heat continues; and afterwards anointing, fomenting, and rubbing them with the mildeſt liniments made of fat and marrow. For nothing proves more efficaciouſly penetrating and relaxing than the aqueous animal vapour, and very ſubtile oils collected in the cavities of the bones. After this remedy, the next rank is held by the ſteam of warm water, which frequently produces wonderful effects in relaxing and ſoftening the fibres.

146. In the cure of theſe comatoſe affections (91. to 95.), we ought to purſue nearly the ſame courſe as in the treatment of apoplexy itſelf (123. to 143.), as they proceed from nearly the ſame cauſes (75. 76. 77. 78. to 85.) which occaſion apoplexy. The cure of them, therefore, intirely depends upon that of the latter complaint.

147. Laſtly, it is of great conſequence to point out the diet and regimen beſt calculated for apoplectic patients. At the height of the diſeaſe, it

is proper to employ as ſpare diet as poſſible, and afterwards to indulge the patient in ſomething generous, at the ſame time prohibiting every thing of a viſcid, glutinous, acrid, and heating kind. It is proper alſo that he ſhould abſtain from whatever occaſions plethora, or an effervescence in the blood, or propels it too copiouſly to the head. Hence the greateſt reſt both of mind and body ought to be enjoined; the temperature of the bed-chamber ought to be ſo regulated as to rather incline to cold, and the air ought to be frequently renewed. But as the diſeaſe is apt to return, if a patient has once laboured under it, he ought to carefully guard againſt ſudden cold, the heat of the meridian ſun, damp weather, fits of paſſion, fire, and heat. During the ſolſtitial and equinoctial periods, if he be plethoric, the quantity of blood ought to be diminiſhed by veneſection. He ought to confine himſelf alſo to vegetable and aceſcent diet, and his drink ought to be ſimple water. He ought to take no ſupper, or only a very ſlight one, to avoid ſleeping eſpecially after meal-times, and to undergo occaſional evacuations. He ought to take one or two drachms of cream of tartar twice or thrice a-week, and moſt ſtudiouſly avoid all the cauſes, in conſequence of which he was formerly prediſpoſed to apoplexy *.

* Tiſſot, *Epiſt. Var. Arg.* 73. 74. 75. *et ſeq.*

CHAPTER V.

OF

CATALEPSY, ECSTACY, AND SOMNAMBULISM.

148. THERE is a great affinity between the comatoſe affections and a very wonderful diſeaſe, of rare occurrence, named by the Greeks *catalepſy*, and *catoche**. It might be tranſlated into Latin by the words *interceptio*, *comprehenſio*, *detentio*, or *occupatio*; for perſons attacked with it immediately become deprived of their ſenſes, both internal and external, particularly the ſenſe of touch and voluntary motion. They do not fall down, however, as in apoplexy or ſyncope, but remain in the poſture in which they happened to be when the diſeaſe attacked them; and are wonderfully apt to aſſume and retain every attitude into which they are thrown. Galen † names ſuch perſons *catochi*; but Celſus, according to Morgagni and Van Swieten ‡, denominates them *attoniti* ‖; adding, that,—unleſs the text in that part be faulty—the diſeaſe is likewiſe named by the Greeks *apoplexia* §. The other ſynonyms employed by the ancients may be ſeen in Cœlius Aurelianus, who, as uſual, has given a very faithful account of catalepſy ¶. The chief of them, however, are, the *aphonia* of Diocles and

Hippocrates; the *anaudia* of Antigines Cleophantinus; the *lethargia* and *ſopor* of other authors; the *congelatio* of the Arabians; and the *ſtupor cum rigiditate* of Plater **.

* Lieutaud claſſes this affection among the convulſive diſeaſes: *Précis de Méd. Malad. Intern. de la Tête*, l. 1. p. 212. But no rigor or ſpaſm, no convulſions, are obſervable in the true and ſimple catalepſy. Others conſider it as being a mixed affection, compoſed of a comatoſe and convulſive one. But in conſequence of the *inſenſibility* and *immobility*, which are obſerved to take place in it, I am of opinion, with Vogel, that it ought to be referred to the *morbi adynamici*.

† *Ex* Galen. *De Cauſſ. Pulſ.* P. iv. c. 16. Caſtellius. ‡ Morgagn. *Epiſt Anat. Med.* ii. n. 2. Van Swieten. *Com. in* Boerhaav. vol. iii. § 1007. ‖ Lib. iii. c. 26. § L. c. ¶ *Acut. Morb.* lib. ii. c. 10. 11. 12. *& Tard Paſſion.* lib. ii. c. 5.

** Tiſſot affirms that the catalepſy of Cœl. Aurelianus is altogether different from ours: *Trait. des Nerfs et de leurs malad.* T. iii. P. ii. c. xxi. In fact, the *catalepſis*, or *catoche*, of Cœl. Aurelianus ſeems rather to belong to *eſtaſis*, or ſpurious catalepſy, of which I ſhall ſhortly treat.

149. The principal peculiarity of this diſeaſe is, that if the patients are ſtanding at the time they are attacked, they remain in the very ſame place; if ſitting, they continue ſo; if with their eyes open, they keep them open; ſuch as were walking at the moment of the attack retain that appearance, preſerving their limbs in the ſame poſture in which they had placed them:—but they neither think, nor ſpeak, nor move, unleſs

impelled by ſome force. Such is the *true* and *legitimate*, or perfect catalepſy * (148. 149.), as it is almoſt univerſally delineated by modern authors. For it is doubted, and with good reaſon, whether by this name the ancients always underſtood one and the ſame affection, or different ones †. It is alſo very probable, if not indiſputable, that all the diſeaſes to which modern authors have given that name, completely correſpond with perfect catalepſy ‡; which will readily appear to every one who chuſes to give a ſlight peruſal to any compilation of obſervations on the ſubject.

* Catalepſy is thus defined by Sauvages: "The ſudden ſuſpenſion of the ſenſes and muſcular motion, the pulſe and reſpiration generally remaining very obſcure, and a wonderful pliability in the limbs to aſſuming and retaining every poſture into which they are put:" *Noſol.* cl. vi. ord. v. gen. xxv. Nor does Home's definition of the complaint differ greatly from this one, as he ſays, that it is preſent "when the patient remains fixed in the ſame ſtate in which he was attacked, being deprived of the internal and external ſenſes:" *Princ. Med. de Morb. non Feb.* P. ii. ſect. 7.

† See the *Britiſh Journal for June* 1751, or *Comment. de Reb. in Scient. Nat. & Med. geſt.* of Ludwig, vol. i. P. iii. p. 114. *et ſeq.* where it is ſhewn that the catalepſy of Cœlius Aurelianus is extended to various other affections.

‡ Vogel *in not. ad* § 572 *De Morb. Cognoſc. et Curand. cap. de Catalepſi*, p. 473. where mention is made of a good many caſes erroneouſly taken for epilepſy, to which I could add many more, did my limits permit. I find that Tiſſot entertains the ſame opinion.

150. But as all theſe ſymptoms (148. 149.) do not uniformly, nor to the ſame extent, occur in all patients, it became neceſſary to eſtabliſh another ſpecies of the complaint, which is named *imperfect* and *ſpurious*. For ſome cataleptic patients retain ſenſation, but remain quite mute, and are intirely deprived of voluntary motion. Others retain ſome ſenſe and recollection; or do not retain the particular flexure of their limbs, at leaſt firmly, gradually relapſing into their former attitude and poſture*. Some, while they are capable of moving one hand, or a limb, are ſtiff all over the body, but not ſo much ſo as in tetanos; while others, again, although they neither hear nor ſee, nor feel when pricked, remaining like dead people, notwithſtanding immediately ſwallow whatever is put into their mouth. In whatever of theſe ways, or ſimilar ones, perſons are affected, they are ſaid to labour under *imperfect* and *ſpurious* catalepſy.

* Vogel. l. c. § 569.

151. Both ſpecies of the complaint (149. 150.) attack the patient, either unaccompanied with any other diſeaſe, or they are conjoined with other complaints, as hyſteria, madneſs, melancholy, ſomnambuliſm, epilepſy, &c.; or eaſily paſs into them. Hence flows another diſtinction into *ſimple* and *compound*. It is likewiſe ſaid to have ſometimes been obſerved as a ſymptom of acute and intermitting fevers, particularly of the tertian and quartan fever; and then, as is manifeſt,

it obtains the name of *ſymptomatic* or *ſecondary*. Moreover, the diſtinctions derived from the different cauſes are purpoſely omitted by me, that I may avoid too great minuteneſs in ſuch nice and ſuperfluous diviſions and ſubdiviſions.

152. Sometimes, though rarely, the paroxyſm is preceded by particular ſymptoms. At times a degree of ſtupor of mind and body, or headach, occur previouſly; in ſome caſes an obtuſe pain in the back of the head *, in others ſtiffneſs of the neck are felt †. Next the diſeaſe comes on ſuddenly, at once depriving the patient of ſenſe and motion. A few minutes afterwards, more rarely a few hours, very ſeldom after a longer period, the patient awakes, as it were, from ſleep, ſighs, and returns to his uſual occupations, perfectly unconſcious of any thing that has paſſed. The ſame complaint returns at intervals, and ſometimes at very diſtant ones, or it frequently obſerves a certain period, and then it ought to be named *catalepſis periodica*. It is a very remarkable circumſtance, that the countenance retains its natural colour and healthy appearance; that the pulſe is more frequently great and rare, than ſmall and fine, contrary to what Sauvages has affirmed ‡; that the reſpiration is generally very gentle and faint; that the eyes remain open, and immoveably fixed upon a ſpot; and that the *ſimple* and *primary* complaint is altogether free from fever.

* Foreſt, l. x. obſ. 42. † Henricus ab Heers, obſ. 3. De Haën, *Rat. Med.* P. iv. c. v. § 3. p. 185. ‡ *Noſol.* l. c.

153. The proximate cauſe of this diſeaſe ſeems to be ſtill unknown. The brain and nerves in particular are affected; but in what this affection conſiſts, no one hitherto, as far as I know, has defined. Without doubt the nerves retain ſome power in acting on the muſcles, as the body is ſtill ſupported, and not reſolved, as in palſy or apoplexy. But there is no acceſs from the external organ to the *ſenſorium commune*; or, if there is, the impreſſion or ſenſation made by objects is not peceived by the mind. Where, then, is the ſenſibility of the nerves? Neither can the *ſenſorium commune* repreſent any thing to the mind, nor can the mind reflect, or will, in conſequence of the natural communication between it and the brain being cut off. "There is therefore no paralyſis of the muſcles," as De Haën obſerves *, "but there is alſo no motion." What then is there? There is a continuation of that which was preſent in the laſt moment of health requiſite for natural motion, which would ſupport itſelf in the part formerly moved. Nay, if any perſon preſent change the patient's poſture, and put him into another, forcing other muſcles to act, it is almoſt the ſame as if the ſenſorium commune beſtowed new powers upon theſe new muſcles, to preſerve this poſture, and that in the moſt obſtinate manner. Let us ſuppoſe, that

what we obſerve takes place in the body, occurs alſo in the mind. For how often has it not been obſerved, that the laſt idea uttered by the patient, immediately before the paroxyſm, remains ſo unchanged as to become the firſt pronounced on recovering from the catalepſy, however long it may have continued †?"

* L. c. p. 189.

† I have likewiſe frequently obſerved this in the moſt violent hyſterical affections, which is more ſurpriſing; but particularly in a marriageable young woman, who was attacked almoſt every month with a hyſterical paroxyſm. Upon theſe occaſions, laughing, ſinging, and univerſal clonic convulſions and ſpaſms ſucceeded each other. Frequently, while ſpeaking or ſinging, ſhe was ſuddenly ſeized with clonic convulſions, together with the loſs of ſenſe. After the whole body, for a conſiderable length of time, ſometimes for half an hour, had been convulſed, and the head had been turned round with great velocity from ſide to ſide, on a ſudden all theſe inordinate motions ceaſing, her loquaciouſneſs, or ſinging, returned, commencing with the words of the converſation or ſong which had been laſt broken off, and ſhe continued to obſerve exactly the ſame tenor in her ſpeech or ſong:—a phenomenon occurring after ſuch violent derangement, ſcarcely to be credited, far leſs to be explained.

154. But from theſe facts what light can be thrown upon the proximate cauſe of the complaint? De Haën candidly confeſſes that little is to be derived from this ſource. He obſerves: "The laws of the wonderful connection ſubſiſting between the mind and body are unknown.

We are totally ignorant of thoſe parts, by means of which this commerce is kept up; we know not by what law they touch and move themſelves, and again ſtop *." But Delatour †, by no means deterred by the difficulty of the inveſtigation, while he laughs at the opinion of the ancients, concerning what they called an *intemperies frigida*, forms another, which, if it does not proceed from that of the ancients, at any rate does not ſeem to differ much from it. In conſequence of the fulneſs of the arteries and veins, which, as Boerhaave tells us, has been diſcovered in the brain of perſons who have died of catalepſy, he does not doubt that its cauſe is too great abundance of the blood and nervous fluid, from which he is perſuaded that the chief ſymptoms of the diſeaſe may be underſtood and explained. For he is of opinion, that in conſequence of this all the nerves become ſo turgid, that on account of a certain ſpecies of plethora, they grow torpid, and incapable of performing any action, contrary to what happens in paralyſis, which implies rather a defect of that fluid, or in convulſions which ſeem to proceed from its irregular motion and diſtribution. Upon the idea of ſuch a torpor of the nerves, on account of plethora, and conſequent lentor of the nervous fluid, he flatters himſelf that we may eaſily explain the equilibrium, and, as it were, ſtiffneſs of the whole body, the anæſtheſia,

or perfect inſenſibility, and its great ſuſceptibility of aſſuming and retaining any poſture or attitude.

* L. c. p. 191. † *Récueil Period. d' Obſerv. de Med. par* M. Vandermonde, T. v. p. 45. *et ſeq.*

155. But we are prevented from prematurely adopting Delatour's opinion, by other anatomical diſſections of perſons who had died of catalepſy, in whom, beſides blood, there was alſo found an effuſion of ſerum, rather occupying the back-part of the head, or at leaſt a watery colluvies, or reddiſh ſerum collected in the back-part of the head, and polypous concretions, and at the ſame time the lungs and liver have been found in a ſtate of corruption *. We are prevented alſo from adopting it by the cautious doubt, whether that fulneſs of the veſſels ought to be conſidered as the cauſe or effect of catalepſy. An objection to it is alſo afforded by the patient's very ſpeedy recovery after an exceedingly ſhort paroxyſm, and the ready and ſudden relapſing into the complaint, merely from a ſudden and violent commotion of mind, as it is ſcarcely conceivable that ſo great a plethora of all the veſſels of the brain is removed in a moment's time, and inſtantly brought back by an emotion of mind. Laſtly, the prediſpoſing cauſes of the complaint, as worms, terror, bad news, which point out neither exceſs of the blood nor other fluids, prevent our adopting Delatour's notion. Moreover,

if exceſs of the blood and nervous fluid occaſion the diſeaſe, why is it not quickly reſolved or prevented, by bleeding, abſtinence, and early evacuations, all of which, on the contrary, generally prove uſeleſs, if not hurtful? Why, if the muſcles poſſeſs any nervous power, is it not equally ſubſervient to the formation and perception of ſenſations and ideas?

* Lieutaud, l. c. Schenck, *Obſ. Med.* l. 1. *De Catocho*, obſ. 2. Holler, *De Morb. Intern.* l. 1. c. 9. *in ſchol.*

156. Probably Home has approached neareſt to the truth, in ſuppoſing that the proximate cauſe of this complaint is *a flow of the nervous fluid into ſome nerves*, and a *ſtagnation of it in all the others;* or, as I imagine, he ſuppoſes that ſome action remains in the nerves diſtributed to the muſcles of voluntary motion, as moſt of thoſe are which proceed from the ſpinal marrow; but that the *ſenſorium commune* becomes quieſcent, and, as it were, lulled, probably along with thoſe nerves which are ſubſervient to ſenſation, as the ones proceeding from the brain, or intercoſtal pair, or great ſympathetic, generally are. But who has demonſtrated that the nerves belonging to the muſcles of voluntary motion may not alſo be ſubſervient to ſenſation? But let us grant Home's ſuppoſition to be true; the manner in which this takes place is ſtill involved in great obſcurity *.

* *Princ. Med.* P. ii. *De Morb. non Febr.* ſect. vii.

157. Nor do the moderns ſeem to have been more ſucceſsful in eſtabliſhing the proximate cauſe of catalepſy, notwithſtanding of their having applied to inveſtigate it with all manner of care. It will therefore be better to paſs it over, and proceed to the remote and manifeſt cauſes of the complaint. According to accurate obſervation, theſe are reduced to long-continued cares, and exertions of thought; deep ſtudy; great grief; terror; bad news ſuddenly imparted; paſſionate love; catching cold; the ſuppreſſion of the menſtrual or hemorrhoidal evacuations, or other excretions; hyſteria; hypochondriaſis; a thick and glutinous ſtate of the blood; a melancholic, mucous, and flaccid temperament; the forcing in of cutaneous eruptions; dyſpepſy; worms; the fumes of charcoal; exceſs in drinking of wine; ebriety; rage; ſomnambuliſm; quartan fevers; and other intermittents of long ſtanding, of which catalepſy is at times a ſymptom; the being ſtruck with lightning, as Celſus tells us; ſerum effuſed within the ſkull, or a congeſtion of thick, black, ſtagnant blood in the veſſels of the brain (154.), particularly in thoſe of the occiput.

THE DIAGNOSIS.

158. The diagnoſis may be collected from par. 148. 149. 150. Nor will it be difficult from thence to know by what ſigns to diſtinguiſh

catalepsy from other similar affections. Some consider ecstacy as being the same affection with catalepsy, while others entertain a different opinion. Among these last, Sauvages affirms that ecstacy differs from catalepsy, "because the limbs do not retain every situation into which they are put, and the patient constantly preserves the same posture which he had at the beginning of the attack, and is deprived of all sense and motion *." What then? Does not this definition of ecstacy convey the idea of that species of catalepsy which is named spurious or imperfect (150.)? But Vogel is of opinion that the patients become *ecstatic*, when those who labour under catalepsy imagine that they see preternatural appearances and visions, and converse with angels; or when they speak languages which they never learnt; nay, they are said to predict future events †. But it does not follow from thence that the complaint of such patients differs so much from catalepsy, as not to be referable to the spurious and imperfect species of the disease (150.). The *ecstasis catochus*, or catalepsy of Henricus ab Heers and Tulpius, the *ecstasis cataleptica*, and the *ecstasis resoluta*, described by Sauvages ‡, seem to be varieties of the spurious or imperfect catalepsy, or at most seem to be complicated with other affections, and therefore do not require a particular explanation.

* *Nosol.* cl. vi. ord. v. gen. 24. † L. c. § 569. ‡ L. c. gen. 25.

159. As somnambulism more decidedly differs from catalepsy, I shall accordingly treat of it apart. In it, as in the most profound sleep, all the sensations seem to be awanting, except, perhaps, that of the touch, in consequence of which sleep-walkers are enabled to avoid obstacles thrown in their way. But the imagination is very vivid, and the voluntary motions are readily and regularly performed: although instances are recorded of persons who, during somnambulism, do not see, but hear, return answers, and perform other actions, according to custom, as if they were awake. Nay, instances are recorded of somnambulists, who not only speak and return answers when questioned, but likewise dispute, read, write, and take a hand at cards; which could not be done without some degree of sight, unless we suppose that in such cases some fraud is practised. For no disease is more frequently feigned by impostors than somnambulism, ecstacy, and catalepsy, as many besides myself have repeatedly remarked. But I consider them as nearly allied, because they frequently succeed to each other, or are combined together. It is, moreover, to be observed, that they are sometimes conjoined with epilepsy, convulsions, delirium, and other diseases, in conse-

quence of which the diagnoſis of the complicated and anomalous complaint becomes difficult.

* Sauvag. *Noſol.* cl. vii. ord. ii. gen. vi.

160. Somnambuliſm is a manifold complaint, according to the variety of its degrees. It is properly diſtinguiſhed into *common* and *furious*, or complicated. That ſpecies is denominated *common*, in which a perſon is affected with ſleep, from which he can be rouſed, however, contrary to what happens in the *furious* and *complicated* ſpecies. In the *common ſpecies* Sauvages remarks two degrees to take place, a ſlighter and a more ſevere one. In the ſlighter degree of the complaint, the ſubjects of it are generally attacked at night after their uſual ſleep, *they do not riſe out of bed, but move themſelves, and ſpeak;* they quarrel, and throw about their arms as if in the act of defending themſelves againſt enemies or robbers, to their own great riſk, and the fear of thoſe about them. But in the more ſevere ſpecies, they riſe out of bed, put on their cloaths, light the candle, look for keys, open doors, draw wine, and perform many other actions without awakening*. Others ſit upon the bottom of the window, and, ſuppoſing themſelves to be beſtriding a horſe, throw themſelves into the attitude of ſpurring it. Some ſwim acroſs rivers. Others do all theſe things with their eyes open, and yet do not awake *. In a word, every individual, according

to his different habits and way of living, performs different actions, as if awake. It is worthy of remark, that they expoſe themſelves to the moſt perilous ſituations, and approach the brink of the moſt dreadful precipices, with impunity, providing they are not rouſed; for, when they are, being thrown into alarm, they fall headlong †. Others, again, if they are imprudently or raſhly awakened, become frantic.

* Sauvages, l. c. † Vide Hildanus, cent. 2. obſ. 84. 85.

161. We name that the *furious* ſpecies, in which, after a ſhort kind of ſlumber, or ſtupor, a perſon immediately begins to commit actions which he is not accuſtomed to perform, conducting himſelf like a madman. It is named *complicated* on account of being frequently combined with, or ſucceeding to, other diſeaſes. This ſpecies was denominated by Sauvages *cataleptic* *, on account of originating from catalepſy, and next terminating in ſomnambuliſm. He adduces an inſtance of it from the Upſal Tranſactions, where the name of *catalepſis delirans* † is given it, and from the Commentaries of the Pariſian Academy ‡. He ſays that it would be named with greater propriety *catalepſis ſomnambulans* ‖. In this ſpecies the patients, like frantic or delirious perſons, ſing, hiſs, exult, dance, entreat, run about, and, moreover, tell ludicrous, obſcene, or filthy ſtories, while they are all the time completely deprived of the ſenſe of ſight, touch,

hearing, ſmell, and taſte. But this kind of ſomnambuliſm does not ſucceed to catalepſy only; and therefore in general the name of *cataleptic* does not anſwer it: for it alſo ſucceeds to hyſterics, convulſions, epilepſy, and other diſeaſes. Hence it will be more proper to diſtinguiſh it into *cataleptic*, *hyſterical*, and *epilectic*, and ſo forth, according as it ſhall be diſcovered to depend upon one or other diſeaſe. But in this ſpecies it may be affirmed, as an uniform characteriſtic of it, that the patients cannot by any means, as in the common ſpecies, be rouſed, but that, after a particular time, which is ſometimes longer, ſometimes ſhorter, the fit goes off ſpontaneouſly.

* *Noſol.* cl. viii. ord. 1. gen. vi. ſp. 2. † *Act. Acad. Upſal.* an. 1732. p. 41. ‡ Ann. 1742. ‖ *Noſol.* cl. vi. ord. v. gen. xxiv. ſp. 6.

162. In both the ſlighter and more violent degree of the common ſpecies of the complaint, many circumſtances occur (160.) which happen to people during ſound ſleep. The external ſenſes are almoſt intirely ſuſpended, while the imagination is ſo affected by internal cauſes, that lively images of ideas are repreſented to the mind, although they are not ſuch as to interrupt the ſleep. But according to the different train of ideas the will is impelled to this or that action, and the inſtruments of motion, as in convulſions and ſpaſms, as if compelled by force, obey its

influence, without the external ſenſes being awakened. In what manner, however, and by what intimate cauſes theſe things take place, is not involved in leſs obſcurity than it has been ſaid to be in catalepſy and ecſtacy. In the furious and complicated ſomnambuliſm, as greater agitation of mind takes place, ſo more violent affections and motions, both mental and corporeal, ariſe. But as not ordinary images of things are repreſented to the mind, but unuſual and extraordinary ones, it is not ſurpriſing that a perſon labouring under the complaint ſhould reſemble one in a ſtate of phrenſy or madneſs. Add to this, that in the *common ſomnambuliſm* the cauſes inducing ſleep, although ſevere, do not lull the ſenſes ſo much that they cannot be excited by obvious cauſes, although with ſomewhat more difficulty: while the contrary happens in the *furious ſomnambuliſm*, in which the cauſes producing it act with more violence and obſtinacy, ſo that the ſenſes, being almoſt overwhelmed, cannot be recalled until a certain length of time, when theſe cauſes of their own accord ceaſe to act. It is therefore probable that the brain is acted upon by nearly the ſame cauſes which I have mentioned as operating in catalepſy and other comatoſe affections, not to mention a natural and hereditary condition of the brain and nervous ſyſtem, which occaſionally may occur. But the more manifeſt cauſes are the prediſpoſing ones. For frequently

ſomnambuliſm has been obſerved to ariſe from intoxication, or the uſe of ſtrong wine, from a heavy ſupper, from food which is apt to occaſion flatulency and difficulty of digeſtion, from too great a load of bed-cloaths, from lying on the back with the head depreſſed, from opium and ſimilar narcotic medicines, from ſtudying after ſupper, and from ſleeping immediately after meals; and from preceding diſeaſes of the brain, particularly catalepſy, epilepſy, lethargy, convulſions, hyſterics, and ſo forth.

THE PROGNOSIS.

163. CATALEPSY, upon the whole, is conſidered as being a dangerous diſeaſe, as, unleſs it is quickly cured, the patients are ſaid to die of it in a ſtate of ſtupor, and, as it were, ſtiff with cold. Poſtelli has ſhewn, in three caſes which he adduces, that this complaint frequently terminates in apoplexy, or a fatal carus *. The greatneſs of its danger is confirmed by Allen, who obſerves: "In general very few recover; and no one who has been a ſecond time attacked †." Not a few caſes are recorded by other authors, and I myſelf could produce ſeveral, of perfect, imperfect, and complicated catalepſies, which, although of long continuance, and frequent occurrence, occaſioned no danger, and were at length

ſucceſsfully removed. The danger is the greater the more ſevere the ſymptoms are, particularly if the diſeaſe is attended with difficulty or interruption of the breathing, ſquinting, ſuppreſſion of the fæces, and reſolution of the ſtrength. Which is likewiſe hinted by Hippocrates, who obſerves: "When catoche or aphonia takes place, with reſolution of the ſtrength, it is attended with danger‡." Catalepſy is conſidered as more dangerous than lethargy. That alſo which occurs in the melancholic temperament is more difficult of cure than when it occurs in the ſanguineous temperament, and when cured commonly degenerates into melancholy. That which is of long continuance generally is both apt to return, and readily terminates in epilepſy and other very ſevere affections of the head. Sometimes it is reſolved by a copious epiſtaxis from the noſe, or by the menſes, or by a bilious diarrhœa ‖, or ſome other ſimilar critical evacuation, or by changing the manner of life, or by travelling, or marriage. Many of theſe things are in common to ecſtacy and ſomnambuliſm; but perſons labouring under the latter run leſs riſk, particularly children, young men, and unmarried women.

* *Journ. de Med.* T. xx. p. 407. † *Synop. Med. Pract.* art. 867. ‡ *Prorrhet.* l. 3. ſect. 4. ‖ *Vid. Avviſi Sulla Salute Umana, del* 1776, p. 393.

THE CURE.

164. THE cure depends very much upon that of apoplexy and the other comatoſe affections. It is commonly conſidered as twofold: firſt, that which muſt be adopted during the paroxyſm; ſecond, that which muſt be employed after it. During the paroxyſm we ought, in my opinion, to abſtain from acrid and heating remedies, particularly if the acceſſion has been occaſioned by hyſteria, or by an exceſſive quantity of blood, both actual and apparent, or by any violent emotion of the mind; and my opinion is ſupported by that of Hoffman *, who thinks that all theſe ought to be avoided, even externally. In plethoric patients it is ſerviceable to let blood, both from the common veins and from the jugular ones, as well as from the noſe. For Aetius obſerved a cure inſtantly performed in a boy labouring under catalepſy, if in fact that was the complaint, by a copious hemorrhage from the noſe †. Acid, anodyne, and ſtimulant remedies, adminiſtered both internally and externally, are then principally recommended ‡. I once cured a grown-up young woman, of a very ſanguine habit, who was liable to long-continued and periodical attacks of imperfect catalepſy, attended ſometimes with very violent convulſions, at other times with furious ſom-

nambuliſm, who received ſcarce any relief from two or three bleedings from the feet and arms, but was at once reſtored to health by opening the jugular or frontal vein. Errhines are ſaid to be generally employed without any effect. If the fomes of the complaint be contained in the ſtomach or neighbouring parts, emetics are conſidered as ſafer after blood has been drawn. Injections and laxatives, rubbing the ſpine of the back with ointments, fomenting the inferior parts, gentle friction, and likewiſe bland epiſpaſtics, if the ſhortneſs of the time does not prevent their employment, are not conſidered as inefficacious.

* *Med. Rat. Syſt.* T. iv. P. 3. c. 4. *in Cautel et Monit. Pract.* § 1. † *Tetrab.* ii. ſerm. 2. c. 4. ‡ Hoffm. *ibid.* l. c.

165. When the paroxyſm is not preſent, we ought to employ thoſe remedies which correct, remove, or prevent the cauſe from which the complaint has proceeded. Hence, that ſpecies of catalepſy which is named from worms occaſioning it, is treated with anthelminthics and laxatives. Benedictus makes mention of a girl of eight years of age, who had laboured for ſeven days under a diſeaſe very like catalepſy, having been immediately cured in conſequence of a great deal of ſordes and worms having been drawn off by means of a peſſary of honey introduced into the anus *. Another young woman, labouring under ecſtatic or imperfect epilepſy, which was

at the ſame time combined with hyſterical convulſions, and had proceeded from ſuppreſſion of the menſes, and worms in the inteſtines, was cured by means of anthelminthics, gentle emmenagogues, and antiſpaſmodic remedies, but particularly oily injections, walking, and riding in a carriage in fine weather †. A third one, who had ſcarcely paſſed her twenty-fourth year, being ſeized with the ecſtatic epilepſy in conſequence of having been long engaged in meditations upon her paſt life, after bleeding and various topical and exciting remedies had been tried to no purpoſe, at length gradually recovered merely by change of air and travelling about ‡. We learn from the *Upſal Tranſactions* ‖, that one Magdalena Valetta, after long labouring under a catalepſy proceeding from grief,—which was at firſt genuine, and next was combined with delirium and ſomnambuliſm, or became, as Sauvages names it, the *catalepſis ſomnambulans*,—and, after repeated bleedings and all kinds of antepileptic and alterative remedies had been tried in vain, being left merely to the care of nature, at length gradually recovered her former health. Another young woman alſo, about twenty-one years of age, in conſequence of lowneſs of ſpirits and ſuppreſſion of the catamenia, fell into genuine catalepſy, which was next ſucceeded by violent convulſions of all the limbs, together with delirium. She continued for a long time to be

occaſionally afflicted with theſe complaints. Reynelli attempted to cure her by means of emetics, cathartics, bleeding, bliſtering, ſtimulant, calefacient, and volatile remedies, but to no purpoſe. At length ſhe obtained relief from the employment of the tincture of black hellebore, which excites the flow of the menſes, and ſpirit of hartſhorn, which proves gently reſolving and opening; though her relief probably ought to be aſcribed to time, and the omitting of the violent medicines, with which ſhe had formerly been diſtreſſed §. Delatour in like manner in vain attempted the cure of a cataleptic girl, of thirteen years of age, by means of bliſters, leeches, the bath, and antihyſterical remedies ¶. For, although by theſe means the acceſſions were rendered milder, they could not be made to ceaſe until the ſpontaneous return of the menſtrual diſcharge, which did not happen until two years afterwards.

* *De Cur. Morb.* l. 1. c. 26. † Hoffman, l. c. obſ. 1. ‡ *Id. ib.* obſ. 2. ‖ Sauvages, cl. vi. gen. 24. ſp. 6. § *Philoſ. Tranſact.* an. 1735. p. 47. ¶ *Récueil Periodiq. d'Obſerv. par* M. Vandermonde, T. v. p. 41.

166. It appears to have been a ſurpriſing cure which Michell performed, by means of ſemicupium and mercurial ointment, in a young woman who had been almoſt completely overwhelmed with catalepſy and coma for the ſpace of two months *. That ſpecies of catalepſy which

is induced by fear in particular requires, beſides bleeding, cordial and antiſpaſmodic remedies; thoſe which are friendly to the nerves, narcotics, nay, opium itſelf. But Mazars † removed a catalepſy, which had been occaſioned in this way, by the employment of aperient, cephalic, and purgative remedies; and we find that Poſtelli ‡ employed a ſimilar method of cure with ſucceſs, having had three opportunities of treating this complaint. That ſpecies which ſupervenes on tertian, quartan, and other intermitting fevers, or rather which accompanies their paroxyſms as a ſymptom, is very quickly diſpelled by employing the peruvian bark. Had Ballonius been acquainted with this valuable remedy, I have no doubt that by having recourſe to it he would have ſaved a patient labouring under a catalepſy, which depended on a quartan fever, who was carried off on the third attack of the complaint ‖. But the ſpecies of catalepſy which originates from long continuance of the diſeaſe, as ſometimes happens, without doubt requires analeptics and reſtoratives. As Ballonius, however, is of opinion that the ſame ſpecies ariſes from too great a quantity of ſerum, which the paleneſs and œdematous appearance of the face uſually indicates, he preſcribes hydrogogue and diuretic cathartics §. But care muſt be taken not to completely reduce the ſyſtem, already in a ſtate of exhauſtion, by theſe evacuations.

* *Récueil Period. d'Obſerv. par* M. Vandermonde, T. xi. p. 109. † *Journ. de Med. (le même)*, T. xvi. p. 131. ‡ *Ibid.* T. xx. p. 407. || Sauvag. l. c. gen. xxiv. ſp. 7. § *Id. ib.*

167. A boy of ten years of age had been for a long time ſadly diſtreſſed with frequent and irregular attacks, though generally of ſhort continuance, of genuine and perfect catalepſy, and next with furious and cataleptic ſomnambuliſm, ſuch as is deſcribed by Sauvages, and that too twice or thrice every day, inſomuch that he was conſidered by weak-minded people as being poſſeſſed with a devil. Bleeding, antepileptic, anthelminthic, and purgative remedies, together with peruvian bark, wild valerian root, and iron, had been employed to no purpoſe. Being at length brought into the hoſpital by his parents, as I could not diſcover any other cauſe of the complaint than very acute ſenſation, and, as it were, exceſſive mobility of the *ſenſorium commune*, merely by the conſtant employment of camphor, gradually increaſing the doſe, I reſtored him to health, contrary to all expectation, within the ſpace of two months: and two years afterwards, on inquiring into the ſtate of his health, I learnt that he had continued perfectly well all along. It is unneceſſary here to ſay any thing concerning the cure of the ſpecies of catalepſy which is occaſioned by the fumes of charcoal, or noxious vapours, or lightning, as I have already ſaid

enough on that ſubject in the chapter on apoplexy and the comatoſe affections *. The plan of cure which is calculated for *ecſtacy* and *ſomnambuliſm* will readily be collected from what has been ſaid of the cure of catalepſy, which does not ſeem to differ much from them.

* Hiſtories both of the *genuine*, and *ſpurious*, or *complicated* catalepſy, are quoted by Vogel; and we are told by him, that all the deſcriptions of catalepſy to be found in the works of authors, are not really ſuch, but that many of them apply to tetanus, coma, or ſtupor (*De Cogn. et Cur. Morb.* § 572.). To this catalogue of Vogel's may be added that one which Tiſſot has very carefully compiled, cap. xxi. *De la Catalepſie, de l'Ecſtaſe, et de l'Anæſtheſie, in* Tom. iii. P. ii. Treatiſe *Des Nerfs et de leurs maladies.* Likewiſe two accounts, the one of genuine catalepſy, combined with a ſpaſm of the whole body, the other of the ſpurious one, conjoined with a certain rigidity, both of them occaſioned by fear, are to be found in Tozzetti, *Prim. Raccolt d'Oſſervaz.* p. 97. and ſeveral others, accompanied with a lethargy, from which there was no rouſing the patient, are publiſhed by Manetti, *Mag. Toſcan.* T. i. P. iii. p. 24. To theſe may be added, an hiſtory of real catalepſy deſcribed by Fiorilli, and publiſhed in the Journal *Avviſi Sulla Salute Umana*, p. 150. an. 1775. and p. 393. an. 1776. the complete cure of which ſeems to have been owing to a ſpontaneous bilious diarrhœa; as alſo another publiſhed in the ſame Journal, n. 5. 6. an. 1783, which exhibits partly the true and ſimple catalepſy, partly the ſpurious and complicated one. An account of catalepſy was publiſhed at Halle in 1780, intitled *Tractatus Pathologicus*, by Gotlieb Leberecht Faber, M. D.

CHAPTER VI.

CONCERNING

THE SPHACELUS OF THE BRAIN, MENTIONED BY HIPPOCRATES;

OR CEPHALITIS.

168. I REMAINED long very doubtful in what part of my work to treat of the *ſphacelus* of the brain, whether here, when diſcuſſing the comatoſe affections, or elſewhere, after having ſpoken of *phrenitis*; but was at length led to adopt the firſt reſolution by the great ſimilitude which ſubſiſts betwixt this affection and thoſe already mentioned. No one will deny that it has been very ſeldom mentioned by medical authors; although it appears formerly to have been in ſome meaſure ſketched out by Hippocrates * and his followers †, and afterwards was clearly deſcribed before our times by Riverius ‡, Petrus Salius ‖, and Bonet §. But now, ſince Sauvages ¶, Sagar **, Carrer ††, and others, have publiſhed their works, it has become ſo well known, that whoever ſhould paſs it over in a work of this kind, would very juſtly be accuſed of great ignorance both of pathology and noſology.

* Aph. 50. ſect. vii. † *Auct. de Morb.* l. 2. n. 20. & l. 3. n. 4. and *Coac. Prænot.* l. 2. c. 2. n. 11. ‡ *Prax.*

Med. l. 2. c. xii. ‖ *De Morb. Partic.* c. 1. § *Sepulchr. Anat.* l. 1. ſect. 1. obſ. 76. to 79. where obſervations are quoted from Ballonius, Rolfinck, Henricus ab Heers, and Braſavola, and illuſtrated with remarks. ¶ *Noſol. Method.* cl. 3. ord. 3. gen. 18. ** *Syſt. Morb. Symp.* cl. x. ord. 1. gen. xiii. publ. at Vienna 1776. cl. xi. ord. 3. gen. xii. †† *Malad. Inflam.* P. iii. ſect. 1. c. 2.

‡‡ Mercurialis, inquiring into what the *morbus ſolſtitialis* is, of which mention is made in the *Trinummus* of Plautus, has the following words: "It is probably not improper to conſider as the ſolſtitial diſeaſe that one which is named by the Greeks ἰνφίασις, by Alexander (1. *Pro.* 98.) καῦμα κεφαλῆς, by Pliny *ardor capitis*, by Avicenna *eryſipelas*, by Rhaſes *ſekakilos*, and by Hippocrates *ſphacelus cerebri*, which, although it chiefly happens in children, takes place alſo in adults, generally proving fatal in the ſpace of three days in the ſummer-time, when, as Alexander writes, it is principally induced." *Var. Lect.* l. v. c. iii.

169. As far as I have been able to learn, both from the obſervations of others, and from what I myſelf have remarked, it ſhews itſelf chiefly by the following marks. At firſt an acute headach comes on, which is chiefly felt in the occiput, but not unfrequently affects one or other ear, and ſometimes the crown of the head, ſtretching along to the vertebræ of the neck, and almoſt to the whole ſpine of the back, uniformly attended with a raging fever, which, however much it diſtreſſes the patient with heat, overwhelms the ſenſes in ſuch a manner, that he frequently not only loſes all deſire for drink or food, but even cannot take

it, or any medicine, when offered him. The febrile paroxyſms are occaſionally aggravated, and then the extremities become cold, but afterwards recover their heat, when the violence of the fever increaſes.

170. Moreover, the face ſwells and becomes red; the eyes, which are diſtended with turgid veins, protuberate, and are almoſt fixed in the head; the mind remains in a ſtate of torpor, the patient ſends forth deep ſighs, and occaſionally groans; he becomes deaf, or at leaſt dull of hearing; when interrogated he looks at the perſon, but replies only in monoſyllables, or broken words; afterwards he becomes profoundly ſilent, and almoſt intirely loſes ſenſation, while merely the motion remains, with which he is generally ſo much agitated, that, owing to his toſſing about, the bed ſeems ſcarcely capable of containing him. He likewiſe ſometimes ſtarts up, rolling himſelf in different directions, ſometimes moving his legs and feet, ſometimes throwing out his arms, ſometimes directing his hands to his head, attempting to tear his hair or beard, and lacerating his face with his nails. When the diſeaſe has advanced, and the ſenſes are completely loſt, he becomes quiet, languid, and mute, occaſionally opening his eyes when rouſed with a loud voice, but ſpeaking nothing. Nay, at times he pays no attention to what is done to him, and occaſionally even when ſmartly pricked he does not draw

back his limbs, nor complain, remaining like a perſon in a ſtate of apoplexy, and being generally in a very ſhort time cut off during the continuance of theſe very fatal ſymptoms. In children I have frequently obſerved a hemiplegia, or convulſive motions in ſome part, particularly about the face, precede death.

THE PROGNOSIS.

171. THIS fatal termination is of ſuch frequent occurrence, that notwithſtanding of immediately having recourſe to the aid of medicine, ſcarcely any patient eſcapes. In general the patient's death happens in three or four days: his life being very ſeldom prolonged beyond thoſe boundaries. Sometimes, however, he ſurvives to the ſeventh * or fourteenth † day, when he at length ſinks under the complaint, which evidently points out the falſehood of the remark of Hippocrates, namely, "That thoſe whoſe brain becomes ſphacelated die in three days, which, if they ſurvive, they recover ‡." For experience has frequently ſhewn, that their life is by no means ſecure even after the third day has elapſed. If any hope remains, it intirely depends on a copious epiſtaxis taking place, which, according to Carrer, promiſes well ‖; while the blood trickling

from the noſtrils by drops affords a fatal ſymptom.

* *Coac. Prænot.* l. 1. † Amat. Luſitan. cent. i. cur. 9.
‡ Aphor. 50. ſect. vii. ‖ L. c.

172. Almoſt all of thoſe who recover, according to Riverius, remain unconſcious of what has paſſed. Diſſection of the dead bodies diſcovers corruption, ſphacelus, or ſuppuration and abſceſs, ſometimes in the cortical, ſometimes in the medullary ſubſtance of the brain, or cerebellum. It is not ſurpriſing, therefore, that in ſome caſes, a little before death, or after it, in conſequence of the corroſion and rupture of the ſurrounding parts, pus burſts forth from the noſtrils, mouth, or ears. On opening the body of a girl of ſix years of age, who had died in conſequence of ſphacelus of the brain within five days, the dura mater was found adhering ſo firmly to the cranium, that it could not be ſeparated without much difficulty. Its veſſels, on removing the cranium, appeared very much diſtended with blood. The pia mater was found ſomewhat harder than uſual, inſomuch that it was with difficulty that it could be divided. On removing the membranes, the upper part of the cortical ſubſtance of the lobes of the brain, which was completely putrid and corrupted, was found to be of a leaden colour, without any mark of effuſion. The medullary ſubſtance, as far as could be diſcovered, was un-

injured. It is probable, however, that in conſequence of the inflammation and turgeſcence of the cortical part of the brain, that the medullary part alſo ſuffered compreſſion. Nothing unnatural was diſcovered in the ventricles or cerebellum, excepting a little ſerum, which being effuſed under the latter, extended from it to the medulla oblongata and beginning of the ſpinal marrow, and was probably the real cauſe of the opiſthotonus which ſupervened laterally *.

* I myſelf ſaw this patient. The diſſection was performed by my former pupil, Vidomari, who is at preſent one of the phyſicians in ordinary to the great Hoſpital at Vienna, by whom alſo the hiſtory of the diſeaſe is drawn up, and all the ſymptoms of it, from which the diagnoſis may be beſt collected, enumerated with ſuch accuracy, that I hope it will not be conſidered as ſuperfluous to inſert the account here. "A girl of ſix years of age, whoſe fluids were rather bad conditioned, who was pale faced, and not free from an acid acrimony,—as was indicated by the deficient redneſs of the face, lips, mouth, gums, and fauces, ſlight thirſt, voracious appetite, very rapid digeſtion, the acid ſmell of the fæces and ſweat, and, laſtly, by the ſoftneſs and laxneſs of her habit;—in the month of June, an. 1779, was attacked with confluent ſmall-pox, which then prevailed epidemically. On their drying, a ſecondary fever, which was aggravated like a quotidian, continued, for the removal of which, cathartics, a conſiderable quantity of whey, peruvian bark, and other antiſeptics were given. At length red, painful, ſmall tumours broke out in various parts of the body, of which ſome were reſolved, while others ſuppurated, and when lanced diſcharged laudable pus. The fever being thus overcome, and the abſceſſes allowed to run a ſufficient length of time, and at length a cicatrix being formed

on them, ſhe was carried to the country to enjoy the pure air, and, by the continued employment of tonics and antiſeptics, recover her former ſtrength and health. In the autumn ſhe returned to town in tolerable good health. During the winter-ſeaſon, which proved remarkably variable and inconſtant, ſhe was frequently diſtreſſed with coryza and a rheumatic cough, occaſioning conſiderable uneaſineſs. In the beginning of the ſpring, which is ſubject to ſudden viciſſitudes of weather, ſhe did not ſufficiently guard againſt the effects of the ſun's heat, the cold air, both at night and during the day, and the winds and other inclemencies, which proved the more pernicious, the more the room, from which ſhe uſed to paſs to the cold air, had been heated.

" But on the 17th day of May 1780, towards evening ſhe ſuddenly complained of an acute pain in the head, extending from the top of the head to the ears, chiefly, however, to the right one, which likewiſe appeared to be affected externally. This pain was ſucceeded by fever, conjoined with bilious vomiting. The night was ſpent without reſt.

" On the 18th the pain continued the ſame; the urine was white, thin, and crude; the pulſe quick, hard, and intermitting; ſhe ſpoke little; and was generally delirious. She was purged by means of a gentle cathartic; in conſequence of which ſhe had a ſlight paſſage. About noon ſhe became ſomewhat cold, and was ſeized with pain over her whole body; afterwards a very violent fever ſucceeded, attended with ſtupor of all the ſenſes. She rejected every thing offered to her, except water with the ſyrup of citron-juice, which ſhe drunk with the greateſt avidity.

" In the evening blood was drawn firſt from the arm, and it was covered with the buffy coat. Immediately after the bleeding, a bliſter of cantharides was applied behind each ear. Still the ſymptoms did not remit. Nay, next night the face ſwelled, but did not become red: the eyes remained almoſt fixed and immoveable, the reſpiration was occaſionally interrupted with ſighs, ſhe occaſionally groaned, and appeared mute and ſtupid.

"On the 19th blood was again let, by means of leeches applied to the temples. A large bliſter was clapped on the crown of the head; and epiſpaſtics to the legs and ſoles of the feet. After noon the extremities became cold; but, on the fever returning in the evening with extreme violence, they again became warm. On being interrogated ſhe paid attention, but did not return any anſwer, at the ſame time continuing to mutter complaints to herſelf in a low voice. She ſometimes ſtarted out of bed, throwing herſelf into different poſtures, at one time moving her legs, at another her arms; ſometimes alſo ſhe attempted to tear her hair, and diſfigure her face with her nails. At night the leeches were again applied, but to the noſtrils.

"On the 20th the ſame ſymptoms continued. The clyſters, which were thrown in with a view of nouriſhing her, were with difficulty retained. After mid-day the extremities turned cold, while the head became warmer, the pulſe frequent, quick, weak, irregular, and intermitting, the reſpiration difficult, and attended with ſnoring and coma ſomnolentum. As the night advanced, the fever was aggravated with the greateſt heat. Afterwards the feet were fomented with warm water, and linen rags dipped in wine and water, and wrung, were applied to the forehead.

"On the 21ſt the ſame ſymptoms, but ſtill more violent, continued. She appeared every moment on the point of death. About noon a ſpontaneous looſeneſs took place, in conſequence of which ſhe was relieved to all appearance; and ſeemed to have been ſaved from the jaws of death. At night an opiſthotonus coming on, all the ſymptoms were aggravated.

"On the 22d day no change having taken place, and her ſtrength ſinking faſt, ſhe expired after mid-day." I have already mentioned the appearances on diſſection.

173. It appears from the careful deſcription of the diſeaſe, hitherto delivered, that it is a ſudden

and acute pain of the head, ſometimes univerſal, ſometimes of particular parts, eſpecially of the occiput, or crown of the head, accompanied with a continued violent fever, firſt attended with ſtupor of the ſenſes and mental faculty, and afterwards with the complete loſs of theſe, the irregular motion of the body, and agitation of the hands, which is named *carphologia*, in the mean time remaining, and in a few days generally ending in a fatal carus or apoplexy.

174. It appears, moreover, that its proximate cauſe is of a very pernicious kind, quickly injuring the brain, and wholly deſtroying its functions. On the whole, it is ſuppoſed to be an inflammation of the brain, taken in its full extent, of ſuch a nature as to quickly deſtroy its very delicate ſtructure, and convert it into a ſtate of putrefaction. Moſt of the moderns, therefore, have named it *cephalitis*, and the ancients *ſphacelus*, *ſideratio*, and *abſceſs*, of the brain, the former deriving the name from the cauſe, the latter from the effects which follow it. For it can by no means be conceived, that Hippocrates ſuppoſed that actual ſphacelus and putrefaction of the brain took place in the diſeaſe at the beginning, as he both knew and affirmed that ſome patients recovered from the complaint. But who, in the caſe of the brain's having become putrid and really ſphacelated, could poſſibly recover? The words of Hippocrates, therefore, as Galen *, Duret †,

and others of his interpreters have remarked, muſt be received with limitation.

* Aph. 51. ſect. vii. & l. 2. *De Loc. Affect.* ‡ *L. Cit. et* Ballonius *Definit. Med.*

175. But there are many probable arguments for believing, that not only the brain and its more intimate parts, but alſo the cerebellum, medulla oblongata, and medulla ſpinalis, are more or leſs affected with this inflammation. For, in order that the ſenſes ſhould firſt become ſtupid and deranged, and afterwards completely deſtroyed, the *ſenſorium commune* muſt neceſſarily be oppreſſed by it: while the cerebellum, medulla oblongata and ſpinalis, from whence the præcordia and muſcles of the joints chiefly derive their nerves, muſt be ſo irritated as to give riſe to anxiety, reſtleſſneſs, toſſing of the limbs, and irregular motions, until they ceaſe in conſequence of perfect inſenſibility, or anæſtheſia, coming on.

176. Among the remote cauſes are ranked, abundance of too acrid and bilious blood, heat of the ſame, and too great a determination of it to the head, inſolation, warm and moiſt ſtates of the air, an epidemic acrid, putrid fevers, contuſions, wounds, and other external injuries, in conſequence of which, not only is inflammation in general occaſioned, but particularly that ſpecies of phrenitis which is named *inflammatory* (189.).

177. I do not, however, wiſh it to be ſuppoſed, that ſphacelus of the brain, and inflammatory phrenitis, are one and the ſame affection, although their cauſes may be common. For there is no ſlight diſtinction between the nature and phenomena of each: phrenitis, from whatever cauſe it ariſes, being an acute and conſtant delirium, and, when it depends on inflammation, generally a violent and furious one, accompanied with conſtant watching. On the other hand, ſphacelus, as I have already ſaid, is an acute pain of the head, which comes on ſuddenly, attended with ſtupor and diminution of the ſenſibility. Perhaps alſo the nature of the part affected occaſions a difference between them. It appears probable, that in phrenitis the more external parts, and in ſphacelus the more internal parts, of the brain and cerebellum are affected. But in what manner the one differs from the other will be more properly the ſubject of inveſtigation when the hiſtory of phrenitis ſhall be delivered (184. to 190.). I ſhall now point out the difference which ſubſiſts between it and apoplexy, epilepſy, and the other comatoſe affections. In apoplexy, at the very beginning, the patient is deprived of both ſenſe and motion, and if the diſeaſe be pure no fever is preſent; on the other hand, in ſphacelus there is both preſent a conſtant acute fever, and it is only towards the end that the ſenſe and motion are intirely ex-

tinguiſhed. For nearly the ſame reaſon ſphacelus differs from epilepſy, in which, although the power of moving remains, the motions which take place are violent, irregular, involuntary, and performed without the patient's being conſcious of them. In ſphacelus the mind ſeems to be capable of purſuing its will, and to be directed to certain actions, and laſtly, the patient does not foam at the mouth. Moreover, a continual fever attends it, contrary to what happens in epilepſy. Beſides, perſons affected with carus and lethargy are overwhelmed with profound ſleep, and lie almoſt immoveable, unleſs they are rouſed by external violence; and they are either without fever, if they labour under the primary diſeaſe, or the fever has preceded the coma, as the primary diſeaſe and cauſe, or ſupervenes upon it, but does not, as in ſphacelus, ariſe at the ſame time.

THE CURE.

178. THIS is a diſeaſe, of all others, requiring thoſe remedies which moſt quickly remove inflammation, leſt the corruption, gangrene, ſuppuration, or abſceſs of the brain and cerebellum, occaſion death. It therefore becomes neceſſary, at the very beginning of the diſeaſe, as I have already repeatedly inculcated (24. 123. to 125.), to draw blood copiouſly both from the veins and

arteries. But if neither repeated bleeding from the veins, nor arteriotomy, prove of any ſervice, we ought to promote a diſcharge of blood from the noſe; for it is affirmed that the diſeaſe has been ſometimes ſpontaneouſly reſolved in this manner. Of thoſe remedies which are uſually employed to draw forth blood from the noſe, Petrus Salius Diverſus * ſelects leeches as being the moſt efficacious, adviſing the application of them to the inner part of the noſe, that by their repeated application, and ſpunges dipt in warm water, and applied to the head, the blood may be made to flow copiouſly. For he affirms that in this way he has recovered ſeveral patients.

* L. c.

179. Revulſion is likewiſe very efficaciouſly occaſioned from the head, both by dry and bloody cupping-glaſſes, which ought to be applied in great numbers, and fixed deep; by friction alſo, and painful binding of the extremities, which likewiſe ought to be fomented with warm water; and, laſtly, by bliſters of cantharides, which may be applied to the ſhoulders and ſcapulæ, ſo as to produce ulceration. It is of conſequence in the mean time to purge the belly gently, but ſufficiently, to uſe emollient remedies for the abdomen, both externally and internally, and to apply to the head thoſe things which prove both repreſſing, refrigerant, and reſolving.

When the brain has been relieved, ſternutatories are propoſed by ſome: but it appears to be a ſafer plan to refreſh the patient with agreeable perfumes, and mild and delicate-ſmelling ſpirits, than to ſhake or irritate the brain by means of acrid ſtimuli.

180. It ſeldom happens that meat can be given before the fourth day; for during the three firſt the patients either take no food, or we are deprived of any opportunity of giving them nouriſhment, on account of the rapid tendency of the diſeaſe to death, which often happens in that time. In the mean time they ought to be forced to drink a great deal of water with oxymel and nitre, by which both the reſolution of the inflammation, and the ſupporting of the patient's ſtrength, are ſufficiently promoted. But after three days have elapſed, if the diſeaſe is to end favourably, they begin to be ſomewhat relieved, and to recover the uſe of their ſenſes; and they may then be fed, but with light food, and at intervals. Afterwards, however, they may be allowed both wine, but in ſmall quantity, and diluted with water, and ſomewhat more generous diet.

CHAPTER VII.

OF

DELIRIUM, AND ITS VARIOUS KINDS.

181. EVERY aberration of the imagination and mental faculty in general, is named by the Greeks *paraphroſyne*, *paracope*, *paraphroneſis*, and by the Latins *delirium*, *inſania*, or *deſipientia*. Almoſt the ſame thing happens to people in a ſtate of delirium which happens to thoſe who dream during ſleep, inſomuch that dreams may not improperly be named the *deliria* of people aſleep, and deliria may be conſidered as the dreams of people awake.

* Fernel. *Patholog.* l. v. c. 2. *et Lexic. Med. Caſtello-Brunon. v. Delirium.*

182. There are various kinds of deliria; nor is their nature the ſame. But I ſhall here confine myſelf to explain only the chief of them, namely, *phrenitis*, *paraphrenitis*, *mania*, and *melancholia*, in which ſometimes the imagination, ſometimes the judgement, and ſometimes both, are deranged,—becauſe all the other ſpecies may be conveniently referred to theſe four,—making a few obſervations towards the end on fatuity,

although this laſt ſcarcely ever falls under the care of the phyſician.

183. To begin with the firſt ſpecies; I may remark, that *phrenitis*, or *phrenetiaſis*, is derived from the word *phrenes*, ſignifying the diaphragm, or *præcordia*, becauſe the moſt ancient phyſicians placed the ſeat of the mind and wiſdom in theſe parts *. Hence all perſons labouring under mental derangement, as it was ſuppoſed that their affection depended on a faulty condition of the præcordia, were formerly called phrenitic: from which opinion Hippocrates himſelf does not ſeem to have differed much, as, in enumerating the ſymptoms of phrenitis, both in his third book *De morbis* †, and in that which is intitled *De affectionibus* ‡, (although it is aſcribed by Galen to his pupil Polybus), he makes particular mention of the pain diſtreſſing the præcordia and ſeptum tranſverſum.

* Auctor. *de Morb. Sacr.* N. 18. *et de Virgin. Morb.* n. 2.
† N. 9. ‡ N. 10. and 12. *ed Marinell.*

184. But afterwards, as Vogel very properly remarks *, both Hippocrates and Celſus, who has tranſlated a great many parts of his works into Latin †, gave the name of phrenitis to that ſpecies of inſanity "which is both acute, and continued, and accompanied with fever." But there were many varieties of this laſt in their works; ſince, according to Celſus †, "of phrenitic patients, ſome are chearful, and others ſad;

ſome are reſtrained more eaſily, and confine their madneſs to words; others riſe up, committing acts of violence, and of theſe ſome do ſo by open force, while others employ artifices, in the execution of which they exhibit the greateſt cunning, but are detected in the end."

* *Prælect. de Cogn. et Cur. Morb.* § 57. in note *). * *De Med.* l. iii. c. 18. ‡ *Ibid.*

185. But by degrees this doctrine was ſomewhat modified, and that name was given not only to the acute and continued delirium, conjoined with fever, but to that one in particular which was violent and furious *; on account, if I miſtake not, of their ſuppoſing that the inflammation of the membranes and brain, which they had long conſidered as the proximate cauſe of phrenitis †, could not give riſe to any thing but a violent and raging madneſs ‡.

* Boerhaav. *De Cogn. et Curand. Morb.* § 771. Ludwig. *Inſtit. Med. Clinic.* P. i. c. ii. ſect. i. § 288. Quarin. *Method. Medend. Febr.* c. ii. *de Phrenitid.* p. 19. † Vid. Galen. *in Prædiction.* l. i. text 38. River. *Prax. Med.* l. i. c. xi. *De Phrenitid.* Nic. Piſo *De Morb. Cogn. et Curand.* l. i. c. x. Fernel. *Patholog.* l. v. c. ii. Lomm. *Medic. Obſerv.* l. ii. p. 66. et alii bene multi.

† Thoſe who have affirmed that phrenitis is an inflammation of the membranes of the brain, and therefore that it is to be diſtinguiſhed from inflammation of the brain itſelf, have probably founded this opinion on the belief that theſe membranes poſſeſs exquiſite ſenſibility, and the brain none at all. The chief of thoſe who entertain this opinion, are Baglivi, Hoffman,

Bellini, and, laſtly, Sauvages, who has therefore beſtowed the peculiar name of *cephalitis* on inflammation of the brain, in order to diſtinguiſh it from *phrenitis*, or inflammation of the membranes. But they ſeem to have gone upon an erroneous opinion; for it has been demonſtrated by the experiments and clinical obſervations of the followers of Haller, that the very oppoſite is the caſe, namely, that the membranes are without feeling, and not the brain. Beſides, it is perfectly well known, that in phrenitis itſelf, when it depends on inflammation, not only the membranes are inflamed, but very frequently the brain alſo. Nor can it happen otherwiſe, as they are ſo nearly connected together. Nor muſt I omit to mention, that ſometimes phrenitis, that is to ſay, furious delirium accompanied with fever, has been obſerved without the membranes being in the leaſt affected, as has appeared from diſſection. See Carrer's Treatiſe *De Malad. Inflam.* P. iii. ſect. i. c. 1. 2.

186. But Galen, in his commentary upon theſe words of Hippocrates, "That obſcure mental derangement, accompanied with trembling, in which the patients are conſtantly handling imaginary objects, is highly phrenitic *," has accuſed thoſe perſons of error, who were of opinion that no body is in a ſtate of phrenitis, unleſs he ſtarts out of bed furious, vociferating, and committing acts of violence. But Celſus, before Galen, as I have already ſhewn (184.), has made mention of ſuch emotions of mind in phrenitic patients being accompanied with ſilence. In our own times, Van Swieten in particular has remarked the ſame thing, having not only enumerated ſuch caſes from the works of Hippocrates †, but alſo mentioning ſuch as he himſelf had ſeen;

and by all of them he confirms the opinion of Galen, which he quotes ‡.

* *Prædict.* l. i. text *citat.* † *Coac.* n. 68. ‡ *Comment. in* Boerhaav. *aphorism.* § 770. & 771.

187. Moreover, a circumstance which militates against those who derive phrenitis from the inflammation of the membranes of the brain, is, that it has frequently appeared from the anatomical observations of Willis, Morgagni, Carrer, and other accurate anatomists, that not only the membranes of the brain, but also the brain itself*, have appeared inflamed, without any delirium at all, far less a violent and raging one following †. This is frequently very manifest, particularly in sphacelus of the brain (168.). Nay, the same authors have demonstrated to a certainty, that the comatose affections are very frequently conjoined with inflammation of the membranes and brain, and therefore that slight and silent mental derangement is rather accompanied with it than furious and raging delirium.

* Carrer, l. c. P. iii. sect. 1. c. i. p. 312. † Bonet. *Sepulchret. Anatom.* l. i. sect. viii. obs. 1. 13. 16. *et* Morgagn. l. c. epist. vii. n. 2. 6. 9. 11. 13. 15.

188. Lastly, although on dissecting the bodies of those who have died of phrenitis, violent inflammations *, suppurations, putrefaction, or abscess of these parts (187.), have been sometimes discovered †, rendering it undeniable that phrenitis originates from that cause; still furious,

continued delirium, accompanied with acute fever, such as the phrenitic one is supposed to be, has frequently proceeded from very different causes, as dissection has shewn, so that no doubt can any longer remain on the subject. For at one time merely a gelatinous or mucous matter, namely, coagulated lymph contained in the interstices of the vessels of the pia mater, and a portion of effused serum has been discovered ‡; at another time, a small quantity of serum under the membranes, and white, hard, small polypous concretions in each of the sinuses of the dura mater ‖; or mucous or reddish serum effused between the membranes or within the ventricles §; at other times, considerable hydatids in the choroid plexus ¶; and not unfrequently a good many conspicuous vessels in the medulla of the brain itself, but none in its cortical part; sometimes likewise tumours, fungous excrescences, hard pustules on the surface of the meninx, bony concretions in it, and, lastly, great dryness of the membranes and brain **.

* Morg. Ep. Cit. n. 13. and elsewhere; where also the small vessels in the membranes and brain are said to have been found turgid with blood. † *Id. ib.* n. 2. Bonet. l. c. obs. 3. 4. 5. 7. *etc.* Eller. *Observ. de Cogn. et Curand. Morb.* sect. viii. p. 128. Lieutaud. *Précis. de Medec. Malad. Intern. de la Tête,* l. i. p. 209. Lanzoni, Eph. *N. C.* Dec. 3. an. 9. obs. 113. Moegling. *ib.* cent. vi. obs. 22. Tissot. *Avis au Peupl.* c. x. p. 183. 184. Morgagn. l. c. Ep. vii. n. 7. 13. *et alibi.* ‡ Morgagn. *ib.* n. 4. ‖ *Id. ib.* n. 11. 13. § *Id. ib.* ¶ *Id. ib.* ** Lieutaud. l. c.

189. Here, I think, it appears that in ſome people phrenitis takes place from inflammation of the brain only, in others from that of the membranes, or both, or at any rate from a certain degree of diſtention of the blood-veſſels *, which, however, is not ſuch as to preſs greatly on the brain, but merely to irritate it, and throw it into commotion; that in others, again, it ariſes from effuſed lymph, or ſerum, of an acrid, corroding, or ſalt kind, or from mucous phlegm exſuding into the cellular membrane, or from polypous concretions obſtructing the venous ſinuſes, and retarding the return of the fluids, or from the other cauſes already mentioned (188.), or from ſeveral of them conjoined †.

* It will juſtly appear a matter of ſurpriſe, that from the very ſame cauſe, namely, inflammation of the membranes of the brain, and the brain itſelf, that ſometimes ſphacelus (175.), ſometimes comatoſe affections (111.), ſometimes furious delirium, ſometimes that which is mild and ſilent, or both ſpecies of phrenitis (185. 186.), diſeaſes of ſo different a nature, and ſometimes alſo that no delirium, ſhould ariſe. If the cauſe is inquired into, I ſhould conſider it as very probable that it conſiſts in the various degrees of the inflammation, and its various manner of acting and force. For when, from inflammation, the medulla of the brain, which is ſaid to be the ſeat of our ideas, is either proximately or remotely irritated and agitated, more than when it is compreſſed, and when that takes place without any remiſſion or intermiſſion, a furious and conſtant delirium, or, according to the moderns, phrenitis, neceſſarily ariſes. On the other hand, if the irritation affects it irregularly, and leſs uniformly, phrenitis then ariſes; but it is of the ſpurious kind, namely, that kind of delirium which is neither conſtant nor furious, but interrupted

and placid. If it is not propagated to the medulla, however, no delirium ſucceeds. But if the violence of the inflammation is ſuch as to preſs upon the medullary part of the brain, and to overwhelm the internal ſenſes, then the comatoſe affections ariſe. Again, when the cerebellum, medulla oblongata, and ſpinal marrow, are particularly irritated, while the internal parts of the brain are rather compreſſed, and when there is a tendency in the blood to putrefaction and ſphacelus; anxiety, reſtleſſneſs, and toſſing, together with ſtupor of the ſenſes, aphonia, and the like, which I have already ſaid take place in ſphacelus, are apt to be aſſociated with the complaint.

† Stoll alſo ſuppoſes that there are various cauſes of phrenitis, and he proves this by different diſſections. Vid. *Rat. Med. in Noſoc. Pract. Vindob.* P. iii. ſect. 3. *Diſſert. de Cauſſ. et ſed. Phrenit.* p. 175.

190. As the cauſes, therefore, of phrenitic delirium appear to be ſo various, according to the different degrees of congeſtion of the blood and other fluids, and their nature and motion being altered, and according to the various parts of the brain which are affected, or the morbid condition of it and its membranes; it neceſſarily follows that we cannot conſider inflammation of the brain or membranes alone as the cauſe of phrenitis. But the force and action of all of them, of whatever nature they be, tend, either by retarding or interrupting the motion of the blood, or by obſtructing, filling, irritating, and diſtracting the veſſels of the brain and membranes, to produce ſuch an intimate derangement of the brain, that irregular, and more or leſs violent, motions in its medullary

fibres—in conſequence of which the force of the appended nerves is increaſed—ariſe, and certain unnatural combinations of ideas, ſubverting the mental faculty and judgment, take place; which motions, if they increaſe to a violent degree, occaſion convulſions of the whole body.

191. Phrenitis, therefore, may be viewed in a double light, either with reſpect to its cauſes, or its particular ſymptoms. But its cauſes are generally ſo obſcure, uncertain, and manifold, that it is no eaſy matter, from the conſideration of them, to arrive at any certain knowledge of its nature. Hence I conſider it as more judicious, —which ought to be recollected with regard to other diſeaſes alſo,—to deſcribe it by the peculiar affections with which it is attended, and which are obvious to the ſenſes, without making mention of any cauſe which may be conſidered as doubtful or fictitious. I ſhould therefore define phrenitis to be *a continued, univerſal, and generally furious delirium, accompanied with an acute fever* *.

* A ſimilar definition was adopted by Carrer and Van Swieten. Admitting this definition, which appears more conſiſtent with nature, it remains that thoſe definitions, according to which *phrenitis is a violent and furious delirium, ariſing from inflammation of the membranes and brain*, and other ſimilar ones, muſt fall to the ground. Nor will that definition probably appear to reſt on a firm foundation, which Vogel has given, who calls phrenitis that kind of malignant fever in which conſtant madneſs is obſerved. For in this way we exclude the

phrenitis occaſioned by ſimple inflammation of the membranes and brain, and other cauſes which by no means partake of malignity, and which indiſputable obſervations, as I have already ſaid, have ſhewn to be poſſible to exiſt.

192. A prediſpoſition is in ſome meaſure created to this diſeaſe by youth; the ſanguine or choleric temperament; a very warm climate or ſeaſon; fermented liquors and ardent ſpirits; long-continued watching; violent affections of the mind; intenſe cares and ſtudies; acrid food and medicines; retention of a hemorrhage from the noſe, or of any other uſual excretion; an inflammatory diatheſis; a ſerous colluvies; an inert, ſluggiſh, and acrid humour; a putrid and bilious condition of the chyle; a ſcorbutic dyſcraſy; a putrid diſſolution of the blood, and its penetrating deeply into the intimate parts of the brain; the metaſtaſis of angina, pleuriſy, peripneumony, ſmall-pox, meaſles, the miliary or petechial eruptions, arthritis, gout, eryſipelas, the lochia and the milk in puerperal women,—eſpecially thoſe who do not give ſuck;—of ſcabies, and other diſeaſes proceeding from acrid lymph; an epidemic miaſma; an acute, violent, ardent, petechial, miliary, and ſlow nervous, and pernicious fever of any kind; rending headachs; the application of too cold or too warm things to the head; blows, contuſions, wounds, and fractures of the cranium; and, laſtly, poiſonous bites, and parti-

cular poiſons, as belladonna, or ſolanum furioſum, hyoſcyomus, ſtramony, cicuta aquatica, and the like.

193. To theſe (192.) ſome authors, but in particular Tiſſot *, add, as being a very frequent evident cauſe of phrenitis, incautious expoſure to the ſun, eſpecially during the ſpring and ſummer ſeaſon. For, in conſequence of the head being long expoſed to the ſun's rays, the veſſels are firſt dilated, the blood becomes thinner and effervesces, paſſing into ſpaces not deſigned for it, the igneous principle is thrown into commotion, probably the air contained within it is extricated, and acquires an elaſtic form, after which the finer parts are exhaled and diſſipated, and the remaining parts condenſed, rendered dry and acrid, in conſequence of which great heat, tenſion, and irritation in the veſſels take place. In a word, all thoſe things take place which are conſidered as being very apt to force the blood with greater violence into the brain, and to induce an inflammatory congeſtion.

* *Avis au Peupl.* T. i. c. x. *De Coup de Soleil.*

194. Phrenitis is commonly divided into *primary* and *ſecondary*. That ſpecies is reckoned *primary* in which the brain is primarily affected, the fever coming on at the ſame time with it, or a little after. That one, again, is named *ſecondary*, in which the brain is affected to be ſure, not primarily however, and from the beginning

of the complaint, but ſecondarily, or during the progreſs of the complaint, as when it ſupervenes on other acute diſeaſes, or fevers. The fever in the latter has been either already preſent as a primary diſeaſe, or is conjoined with it, although ariſing from another cauſe, or accompanies it as a ſymptom. It is ſometimes named *ſymptomatic phrenitis*, namely, when it is a ſymptom of another diſeaſe ſtill preſent, as of an acute, malignant, or epidemic fever, pleuriſy, peripneumony, ſmall-pox, meaſles, the *iliac paſſion*, &c. I do not wiſh, however, that the ſecondary and ſymptomatic ſpecies of the complaint, in which we ſuppoſe the brain to be idiopathically affected, ſhould be confounded with that kind of delirium, which is excited by a cauſe exiſting elſewhere, and deranging the brain merely ſympathetically, and which, on the cauſe being removed, immediately ceaſes; for it ſeems rather to belong to *paraphrenitis*, as I ſhall hereafter ſhew. Again, the *primary* ſpecies is generally conſidered as the ſame with actual phrenitis: and the *ſecondary* the ſame as the *ſymptomatic* ſpecies. But, in the opinion of others, that ſpecies is conſidered as the *real phrenitis*, which is occaſioned by inflammation of the membrances and brain; and that one as *ſpurious* which is occaſioned by other cauſes, but ſuch as are inherent in the brain and its membranes. But it ſtill may be inquired, whe-

ther or not real phrenitis has been ſometimes induced by other cauſes beſides inflammation?

* Not a few of the caſes of phrenitis deſcribed by Stoll more properly come under the head of Paraphrenitis.

195. In this variety of opinion, therefore, in order to avoid all diſpute, it will perhaps be better to name that ſpecies *genuine phrenitis*, in which perpetual and furious delirium, accompanied with ſpeaking and acute fever, occurs; and that one *ſpurious*, in which the delirium is neither ſo continued nor furious, being tranquil and ſilent, and the fever not ſo violent. Both ſpecies of the complaint, whether genuine or ſpurious, primary or ſecondary, may be conveniently diſtinguiſhed, with a view to the cauſe of the complaint, into *ſanguineous*, *ſerous*, *mixed*, *metaſtatic*, *purulent*, &c. Again, it is better to ſubdivide the *ſanguineous* ſpecies into *phlegmonic* and *eryſipelatous*. Nor is it improper to divide the *ſerous* ſpecies into two kinds, the one occaſioned by a viſcid, thick, and mucous fluid, obſtructing the veſſels of the brain and membranes in different parts; the other proceeding from thin lymph, which proves hurtful more from its acrimony than thickneſs, infected with foreign and noxious matters, and irritating the brain and membranes. And it appears that almoſt all the cauſes of phrenitis may be conveniently referred to theſe differences. The phyſician, there-

fore, ought to pay attention to them, if he be desirous of assisting his patients according to the precepts of rational medicine.

196. It is proper to observe also, that phrenitis differs from that delirium which accompanies the more violent paroxysms of intermitting fevers, and which only increases and becomes manifest when the fever is aggravated, remitting and ceasing on the latter taking a turn. This species of delirium is named by some, *delirium febrile*, by others, as Lommius, *paraphrenesis*, and by a third set, among whom is Carrer, *paraphrosyne*. For it differs from phrenitis on account of having an intermission and returning at intervals; while, on the other hand, in phrenitis, we have seen that there is present a constant and uninterrupted state of fatuity. It will shortly appear in what manner we are to distinguish phrenitis from paraphrenitis, mania, melancholia, and other states of mental derangement.

THE DIAGNOSIS.

197. The sanguineous species of phrenitis (196.), is preceded by constant watching, acute headach, and great heat, together with unusual irrascibility, nay, sometimes by actual madness. To these symptoms are added, an acute and violent fever; very troublesome pulsation of the arteries over the whole

head, particularly of the temporal ones; unuſual rolling of the eyes; redneſs and ſwelling of them and of the whole face, accompanied with a wildneſs of expreſſion; ſudden or gradual derangement of the mind, beginning particularly during ſleep, afterwards ſucceeded by conſtant mental diſorder, which is at one time accompanied with violence and fury, at other times not; a tendency to forget every thing, even thoſe things which have juſt paſt; a frequent and quick pulſe, often at the beginning contracted, afterwards ſmall and irregular, and as tenſe as a cord; great and ſlow, or irregular reſpiration; dryneſs and roughneſs of the mouth and tongue; generally no ſenſe of thirſt, although the tongue and fauces be very dry; ſcanty and deep coloured urine, ſometimes thin and watery, ſometimes turbid; no ſleep, or, if any be preſent, that which is interrupted with alarming appearances and terrifying dreams.

198. The cauſes alſo which have given riſe to the complaint throw a great deal of light on its nature. We muſt therefore inquire, whether they were ſuch as are ſuppoſed to be capable of occaſioning an accumulation of blood, and exciting inflammation; whether the ſanguine temperament, the patient's age, habit of body, and manner of living, correſpond with them; whether diſcharges of blood have been deficient, or the metaſtaſis of any inflammation has taken

place; for the proper inveſtigation of theſe points will render our judgment concerning the preſence of the ſanguineous or inflammatory phrenitis much more probable. If, at the ſame time, a comatoſe affection, or rather coma vigil, concur, if the face and neck ſwell, and if the blood which is drawn be thick, and covered with a tenacious buffy coat, the preſence of phlegmonic phrenitis is indicated. But if watching rather than ſleep, and inſtead of ſilence rage, and a lancinating pain of the head rather than a throbbing one, together with a yellowiſh colour of the ſkin rather than a red one, be preſent; if the blood which is drawn be thin, florid, and ſurrounded with yellow ſerum; if the temperament be choleric; if it be the ſummer-ſeaſon; and if bilious, ardent, and putrid fevers be ſtationary; we may infer that the *eryſipelatous phrenitis* is preſent.

199. Symptoms ſimilar to thoſe already mentioned (197.), but generally leſs violent in degree, take place when the phrenitis is ſecondary, and the ſymptom of another diſeaſe. They are much milder if it be rather the ſerous ſpecies, which will appear particularly from the phlegmatic temperament; from the patient's infancy or old age; from his uſing a fluid diet; from the marſhineſs of the ſituation, and the indolence of the patient's life; from the paleneſs of the face, ſoftneſs of the pulſe, ſmallneſs of the heat on the

forehead; from inconſiderable pulſation of the temporal arteries; from there being leſs dryneſs of the tongue and fauces; and from other marks already enumerated (102.). A ſenſe of weight rather than of acute pain, and there being greater drowſineſs, indicate lentor of the ſerum and lymph; while the perception of pricking, and the patient's remaining awake, denote acrimony and tenuity of them; to ſay nothing of the preceding ſymptoms, from which the greateſt light may be obtained. That the complaint is a mixture of both cauſes, namely, of the ſanguineous and ſerous, will appear from the marks peculiar to both being united: and it will be found that it is of the *metaſtatic* or *purulent* ſpecies alone from the retroſpect of the preceding circumſtances. A perſon may be enabled to form a conjecture with reſpect to its leſs frequent and more hidden cauſes (188. 189.), from the careful examination of the firſt origin of the complaint, and the peculiar and unuſual combination of ſymptoms. This, however, is a matter attended with much difficulty, and requires a phyſician of the greateſt ſkill and perſpicacity.

202. It is in common to every ſpecies of phrenitis for the patient to ſpeak a great deal of incoherent nonſenſe, to laugh, intreat, to get into a paſſion, to leap up, and attempt eſcaping; and afterwards, as the diſeaſe increaſes in violence, to be ſeized with tremors of the hands, to

gather the bed-cloaths, to graſp the curtains, to catch at imaginary objects floating in the air, to fold together the bed-covering, to grind the teeth, and, laſtly, to fall into *coma*, or *carus*, with the greateſt loſs of ſtrength and weakneſs of the pulſe, or to be ſeized with convulſions, death in a ſhort time after cloſing the ſcene.

THE PROGNOSIS.

201. This kind of mental derangement is by far the moſt acute, as it generally proves fatal in a very ſhort period. We are informed by Proſper Alpinus, that in Egypt patients are frequently cut off within a few hours after the attack *. For he mentions having ſeen ſeveral patients labouring under phrenitis, who expired in three or four hours; contrary to what Galen had an opportunity of obſerving †. In general, however, the complaint proves fatal in three, four, or ſeven days. The near approach of death is announced by conſtant madneſs and watching; by the obſtinate retention of the ſtools and urine, or by the latter, from being deep-coloured, becoming pale, or, from being thick, its ſuddenly growing thin; by difficulty or incapability of ſwallowing without any diſcernible injury of the inſide of the fauces; or by pain of the throat or neck, without ſwelling; by difficulty of extending the legs; and, laſtly, by ſyncope, or convulſions.

* *Med. Ægypt.* l. i. c. 13. p. 23. † In l. 3. *epidem.*

202. It is alſo a dangerous ſymptom when a cold ſweat comes on, when the extremities become cold, and do not recover their heat, or when the delirium paſſes into lethargy or coma without any good reaſon. For it is a proof of gangrene, abſceſs, or infarction, having arrived at their height. This will more certainly be manifeſted by the circumſtance of the fever remitting, by greeniſh ſtuff being thrown off the ſtomach, by the face becoming pale, by the pulſe being languid and irregular, and by ſome degree of tranquillity of mind returning for a little, as ſometimes happens a ſhort time before death.

203. It is alſo a bad ſign when a trickling of blood from the noſe takes place, and when the urine is watery and thin, or, after ſome ſymptoms of concoction, when it paſſes into that which is crude and percolated, or exhibits a black cloud floating in it: the one ſymptom denoting a metaſtaſis of the morbid matter to the head, the other putrefaction, and, as it were, necroſis of the fluids. None, or very little hope is left, in the phrenitis ariſing from a metaſtaſis, or in that which comes on when the ſtrength is already exhauſted by long continuance of the diſeaſe. Hence, perhaps, Platner ſuppoſed that that ſpecies is more to be dreaded which gradually in-

creaſes, than that which comes on ſuddenly; although both of them to me appear to be attended with great danger. In general the delirium which is accompanied with laughter is ſuppoſed to be leſs dangerous than that in which grief, anxiety, ſilence, or fear occur.

204. But when the diſeaſe proceeds more mildly, and recourſe is quickly had to medical aid, it is not unfrequently reſolved by an epiſtaxis, or by an univerſal warm ſweat, or by a diarrhœa, or by the hemorrhoidal or menſtrual diſcharge, or by varices in the legs, or by ſome other evacuation, the utility of which appears from the mitigation of the ſymptoms, and the ſucceſſive reſtoration of all the functions. A diſcharge of pus has been obſerved to take place from the ears, or other parts, with relief; but this is of very rare occurrence. It is alſo a good ſign when a great diſcharge of water takes place from the mouth or noſtrils, or when, upon the critical days, and at the ſame time ſymptoms of concoction appearing, deafneſs comes on, or when the cheſt or limbs are attacked with pains, from which the head receives relief; as it is a proof that the complaint is transferred from the internal to the external parts of the head.

205. When the fever is overcome, it ſometimes happens that the delirium is ſtill prolonged; nay, it occaſionally paſſes into *mania*, or *amauroſis*, namely, as ſome explain it, when the veſſels of

the brain, being dilated and turgid after the fever has ceaſed, cannot relieve themſelves from the obſtructing matter, and, as it were, grow together, thus interrupting the circulation of the blood and other fluids; or when the morbid matter is transferred from the internal parts of the brain to the optic nerves, and thoſe of hearing; or, laſtly, when (as is alſo probable) the intimate medullary texture of the brain has been ſo much injured, that it cannot any longer be reſtored to its former healthy condition throughout. Van Swieten mentions, that perpetual *mania* and *fatuity* are very frequently the ſequel of the phrenitis with which puerperal women are affected in conſequence of retention of the lochia *. I myſelf, when a young man, had an opportunity of obſerving an inſtance of mental imbecillity, which aroſe from this cauſe, in a beautiful woman, in good health, and of an excellent habit of body, who had become phrenitic in conſequence of the ſudden ſuppreſſion of the lochia proceeding from the horror of beholding the corpſe of her child, which was imprudently ſhewn to her.

* *Comment. in* Boerhaav. § 774. p. 149. in ſome editions.

THE CURE.

206. In treating the *phlegmonic phrenitis* (195. 198.), particularly the primary one, all thoſe remedies are proper which are employed

for other inflammations, eſpecially very copious bleeding from the veins of the arm, foot, neck, and forehead. The temporal artery itſelf may be occaſionally opened, which is frequently attended with the higheſt benefit *. Likewiſe the hemorrhoidal veins ought to be occaſionally made to bleed, by the application of leeches: for it has been aſcertained by many, particularly by Van Swieten, that this diſcharge ſeldom fails, and that frequently the delirium is allayed by the evacuation of blood that takes place from them †. Likewiſe a diſcharge of blood from the noſe, either by means of leeches, or by introducing a pen into the noſtrils, or occaſioned in any other way, has been found to prove of the greateſt ſervice. Nay, they are ſometimes applied behind the ears with great advantage, and are ſo highly prized by Caſimir Medicus, that in the cure of the ſecondary phrenitis which ſupervenes upon acute diſeaſes, he conſiders no evacuation of blood as preferable to that which is occaſioned by the application of leeches behind the ears ‡.

* Sims, for the cure of phrenitis, relies more upon a pound of blood taken from the temporal artery, than on thirty ounces drawn from any vein. He obſerved a furious delirium, attended with ferocious looks and redneſs of the eyes, removed, and a tranquil ſleep induced, from which the patient awoke freed from all danger, by means of ten or twelve ounces of blood drawn in this manner. *Epid. Diſeaſes.*

† On Boerhaav. § 702. ‡ *Collect. Obſerv. Med. Pract.* T. ii. p. 469.

207. Moreover, we ought to adminiſter internally antiphlogiſtic remedies, and copious diluent and cooling drink, calculated for checking the exceſſive irritability of the heart and arteries; the hands and feet ought to be immerſed in warm water; and relaxing and cooling injections ought to be thrown in; the diſcharge of the fæces ought to be excited by employing cathartics, to occaſion revulſion; and thoſe things ſhould be applied to the head, previouſly ſhaved, which prove moiſtening, emollient, derive to the ſurface, and check or gently allay the heat. It is proper alſo, that the patient ſhould lie with his head raiſed, that he ſhould ſometimes ſit up, breathe the cool air, that he ſhould be lightly covered, that the light ſhould be excluded, and ſilence preſerved. When the violence of the fever is at length broken, and the inflammation nearly reſolved, if exceſſive ſenſibility and ataxy of the nerves ſeem ſtill to protract the delirium and watching, it is ſometimes not only harmleſs, but neceſſary and uſeful, to employ narcotics, or opium itſelf, but in divided doſes, and with caution.

208. But when it appears that enough of blood has been drawn, or the ſtrength is incapable of bearing any farther evacuation of it, and the delirium and other effects of the inflammation ſtill continue equally violent, it becomes then the beſt and ſafeſt plan to apply cupping-glaſſes, if they have not already been employed, to the occiput,

behind the ears, to the back, or legs, having previouſly made a pretty deep inciſion in the ſkin, or to apply leeches to the parts already repeatedly pointed out, or bliſters to the ſoles of the feet and calves of the legs. Not a few practitioners, in conſequence of having ſeveral times experienced the ſucceſs of it, adviſe the applying a bliſter of cantharides to the hairy ſcalp, previouſly ſhaved. But that ought to be done with caution, and, in my opinion, particularly when the delirium is conjoined with coma and ſtupor more violent than uſual, and neither the patient's temperament, habit of body, nor exceſſive ſenſibility of the nerves oppoſe it. For in theſe caſes it is more proper to employ gentle revellents, as dry cupping-glaſſes, frictions, ſinapiſms, and bathing the feet and legs, particularly as Baglivi is of opinion, that in the inflammatory phrenitis bliſters prove more hurtful than ſerviceable *.

* *Præfat. de Fibr. Motric. &c.* l. 1. c. 6. Vid. *Comment. de Reb. in Med. et Scient. Nat. geſt.* vol. ii. p. 400.

209. Moreover, in the ſpecies of phrenitis which we have named *eryſipelatous*, blood muſt be let, but the bleeding ought not to be puſhed ſo far as in the phlegmonic ſpecies. It is therefore proper to let it in ſmaller quantity, and leſs frequently, as it has been often obſerved to increaſe the delirium and occaſion convulſion *. This not unfrequently happens, particularly in certain

ſtates of the air, and in malignant or putrid epidemic fevers, as alſo in thoſe of hoſpitals. Nay, it will ſometimes be ſufficient to attempt it by means of cupping-glaſſes or leeches, and to apply other things which produce revulſion from the head in the gentleſt manner. It is attended with the greateſt advantage to purge the belly, both by means of injections and cryſtals of tartar, or by whey in which tamarinds have been boiled; to allay the heat of the blood by ſubacid vegetable juices, or, when there is occaſion for more decided practice, by means of ſulphuric or nitrous acid; to dilute, obtund, and correct the bilious and alkaleſcent acrimony, not only by theſe means, but alſo by copious, aceſcent, farinaceous, cold drink; and if the age, temperament, ſeaſon, climate, or the patient's habits, render it proper, even that which is mixed with ice may be given. The head, if in any caſe it be proper, certainly in this ought to be ſhaved, and ſprinkled and rubbed with cold, or lukewarm, vinegar and water, or wine and water, the feet in the mean time being immerſed in warm water, or wrapt up in flannel cloths wrung from it.

* Probably to this ſpecies belonged that phrenitis in which, as we are informed by Sims, bleeding reduced the ſtrength, and occaſioned death within an hour; while flannel cloths, wrung from water and wrapt about the feet, in conſequence of calling forth a gentle ſweat, proved highly beneficial. The eyes of theſe phrenitic patients were red, inflamed, and fierce, their tongue dry, there was great delirium, and a very hard

pulſe. Moſt of them died on the third day; thoſe who ſurvived it eſcaped death. The abuſe of heating liquors and the catching of cold occaſioned the complaint. It was the ſpring-ſeaſon.

210. Nor ought we to depart much from this method of cure (208. 209.) in treating the *ſymptomatic*, or *ſecondary*, ſpecies (194.). In the ſerous ſpecies, according to the different nature of its cauſes (195.), ſometimes volatile remedies, together with bliſters, and acrid, irritating, and revellent means, are proper; at other times we muſt abſtain from theſe, and rather oppoſe the acrimony by means of diluents, correctives, and diaphoretics. But the method of treating the mixed ſpecies (199.) of the complaint, ought to be compoſed of the method of cure required by the ſanguineous and ſerous ſpecies. In general, if it be of the ſpurious kind, there is not occaſion for ſuch repeated bleedings, nor ſuch a concourſe of antiphlogiſtic remedies; or at leaſt different methods of cure are required, according to the variation of the cauſe from which the diſeaſe proceeds. The delirium which takes place during the increaſe of fevers is diſcuſſed by the ſame remedies which are adapted to the removal of the fever itſelf. That, again, which is cheriſhed by a colluvies in the *primæ viæ* requires emetics and cathartics, and does not ſtand in need of bleeding, which, on the contrary, would be very hurtful *.

* Boerhaave & Swieten, § 85. 620. 701. 702.

211. Likewiſe the temperature of the air which the patient breathes ought to incline to cold and moiſt, and the weakeſt kind of diet ought to be employed. After the force of the fever and phrenitis have been blunted, if a ſlight delirium or coma, or other affection of the brain, ſtill remain, and if the ſtrength be much exhauſted, the ſyſtem muſt no longer be haraſſed by bleeding or purging, but the remainder of the cure ought rather to be performed by reſt, abſtaining from remedies, and uſing a bland kind of diet *.

* Swieten, l. c.

PARAPHRENITIS.

212. I SHALL now proceed to Paraphrenitis. This term is not employed by all in the ſame ſenſe, but by ſome vaguely, by others more ſtrictly. They comprehend by this word every kind of delirium attended with fever, which is induced ſympathetically by the inflammation of ſome of the thoracic or abdominal viſcera. But as many ſpecies of this paraphrenitis may be conſtituted as there are diſeaſes of which it is a ſymptom. Under this head, alſo, ſome authors claſs the deliria which ariſe by ſympathy of the nerves, from inflammation of the ear, or whitlow in the fingers, or from excruciating pain in any part. To it alſo might be referred thoſe derangements of the mental faculty which ſuper-

vene on acute fevers, whether the brain be affected idiopathically, or ſympathetically, from worms, bile, or ſordes in the *primæ viæ*. From which laſt cauſe men are ſo frequently affected with mental derangement, that Rahn, along with Tiſſot, thinks, that out of twenty caſes of delirium, both acute and chronic, eighteen are referable to vitiated ſtates of the hypochondres; and confirms this by quoting obſervations, from which it appears that in theſe caſes the brain was altogether free of any taint *; although this apparent ſoundneſs of the brain does not always to a certainty point out that the delirium was ſympathetic. Laſtly, ſome underſtand by the name of Paraphrenitis, that delirium which is occaſioned by other cauſes, beſides inflammation, exiſting in the brain, and which I have already ſhewn (195.), by ſome is named *ſpurious phrenitis*.

* *Comment. de Reb. in Scient. Nat. et Med. geſt.* vol. xviii. P. iii. p. 456.

† The brain may be injured in ſo many, and in ſuch obſcure ways, that even when no diſcoverable injury is found in it, it may be ſtill doubted whether or not the phrenitis was of the ſympathetic kind. For we are not intitled immediately to pronounce that the brain is uninjured, and that the delirium has ariſen from another cauſe, when no diſcernible injury is to be found in it. The opinion of Rahn and Tiſſot is confirmed by the obſervations of Stoll. *Rat. Med.* T. iii.

213. Thoſe who affirm that they employ the

word *paraphrenitis* more ſtrictly, contend, along with Boerhaave, that it is nothing but actual inflammation of the diaphragm, which they ſay Hippocrates and Galen affirmed to be conjoined with perpetual delirium *. For the diaphragm, ſince it is conſidered as being very nervous, and, on account of its muſcular ſtructure, extremely liable to ſpaſms, on becoming inflamed, is ſuppoſed to be very apt to draw the brain into conſent, and to derange it ſo as to produce conſiderable and conſtant diſorder of mind.

* Van Swieten in Boerhaav. § 907. 909.

214. It cannot be denied that ſometimes, when the diaphragm is inflamed, particularly when the diſeaſe is increaſing *, the mind is affected and deranged: at the ſame time it is an undeniable fact, as appears from the teſtimony of many authors, and unqueſtionable anatomical demonſtration †, that inflammation, both of the tendinous and fleſhy part of the diaphragm, has very frequently been unaccompanied with delirium, and, therefore, that delirium is not a peculiar and inſeparable ſymptom of this diſeaſe. This is a fact which I myſelf have more than once proven on diſſection of dead bodies, but in particular of late in the caſe of a friend of mine, who had been cut off in a few days by an inflammation of the convex part of the diaphragm, occaſioned by the retention of an acrid herpetic humour, which had been carried to that part. Until the very laſt

hour of his life he was diſtreſſed with conſtant hiccup, but no delirium whatever was preſent.

* Ettmull. *Oper.* vol. ii. p. 565. P. Salius, *De Affect. Part.* c. 8. Carrer, *Oper. Citat.* ſect. 2. c. 6. p. 492. † Willis, *De Anim. Brutor.* P. ii. c. 10. Morgag. *Epiſt. Anat. Med.* vii. n. 14. Carrer, l. c. Michele Sarconi *Iſtor. Ragionat. de Mali, &c.* P. i. p. 209.

THE DIAGNOSIS.

215. THE paraphrenitis explained in the firſt place (212.), as it is generally a ſymptom of other diſeaſes, ought to be diſtinguiſhed by the preſence and combination of theſe. That which ſucceeds to inflammation of the diaphragm (213.) is diſtinguiſhed from phrenitis chiefly by the injury of the reſpiration and the pain of the part *. For in phrenitis the head is affected with a throbbing pain, in the paraphrenitis, from inflammation of the diaphragm, an excruciating pain is felt in the præcordia, and is confined between the ſpurious ribs and lower vertebræ of the back. In the former the reſpiration is great and ſlow, particularly at the beginning; in the latter it is quick, ſmall, irregular, and every time the breath is drawn the pain is increaſed. Moreover, the hypochondres are affected with pain, they become tenſe, as if drawn upwards, the abdomen is ſcarcely moved at all by inſpiring, ſo much is the inſpiration checked by the pain; frequently

anxiety, a dry cough, hiccup, and other ſymptoms experienced in pleuriſy are added to theſe.

* But this will appear better, I ſuppoſe, in the chapter *De Pulmonum Inflammationibus, morbiſque affinibus.*

THE PROGNOSIS AND CURE.

216. In whatever ſenſe the term Paraphrenitis is received, it always denotes a ſevere and dangerous diſeaſe. But the moſt formidable of all the ſpecies is that which is occaſioned by inflammation of the *ſeptum tranſverſum.* As it is uſually occaſioned by the cauſes which give riſe to pleuriſy, and generally terminates in the ſame manner; ſo likewiſe it requires the ſame method of treatment which is employed in pleuriſy and other inflammations.

MANIA AND MELANCHOLY.

217. Hitherto I have been ſpeaking of the ſpecies of delirium which are accompanied with fever. It remains for me to give a brief account of thoſe which are unaccompanied with it. Firſt comes *mania*, which is invariably defined to be a delirium unaccompanied with fever, but of the furious and outrageous kind. It is therefore diſtinguiſhed from *true phrenitis* by the abſence of fever. But it not unfrequently happens that fe-

ver ſupervenes on mania, particularly when it has attained its height, as an acceſſory ſymptom. In this ſpecies of madneſs ſeveral of the ideas are deranged, and the mind agitated, accompanied with increaſed ſtrength and great fury; and hence it greatly differs from *melancholia*, in which the mind, being "obſtinately bent on one or two ideas or objects only, is deranged, and at the ſame time the complaint is accompanied with fear and deſpondency; while in other reſpects the mind is perfectly ſound."

218. Under the head of melancholia, as a genus, fall *lycanthropia* or *cynanthropia*, in which the patients imagine themſelves to be wolves or dogs, and endeavour as much as poſſible to imitate the manners and way of living of theſe animals. To this place alſo belongs *noſtalgia*, or the vaſt grief and wretchedneſs under which a perſon ſometimes labours when forced to be abſent from his native country, his mind being conſtantly engroſſed with no other idea than the ardent deſire of returning home. The Swiſs *, Germans, and other nations accuſtomed to dwell in mountainous ſituations, on being removed to foreign and level countries, where different manners and living prevail, are moſt liable to this mental affection. Such is the force of that melancholy, that the ſoldiers, on being attacked with it,—which very frequently happens,—by no danger, by no dread of puniſhment or death, can be deterred from

deſertion, preferring death itſelf to being any longer prevented from reviſiting their native country. Hence, if they be not gratified in their wiſh, being worn out with want of ſleep, grief, indigeſtion, languor, anxiety, ſtupor, palpitation of the heart, ſlow fever, and emaciation, they are very quickly carried off.

* Noſtalgia, perhaps from νοστέω, *redeo*, and ἄλγος, *dolor*. Harder has denominated it with great propriety *noſtomania*, being, as it were, a furious deſire of returning home. Others, as Zwinger, have thought fit to name it *pothopatridalgia*, from πόθος, *deſiderium*, and πατρις, *patria*, being, as it were, the grief or pain ariſing from regretting the being abſent from one's native country; likewiſe *philopatridomania*, *noſtopatridalgia*, *noſtopatridomania*, the etymology of each of which is manifeſt. Jo. Jacobus Scheuchzer, in order to gratify his countrymen, wrote a diſſertation on noſtalgia worthy of peruſal, which is to be found in page 307. of the firſt volume of the *Comment. Inſtit. Bononienſ.* Likewiſe a very complete diſſertation on the ſame ſubject was publiſhed by Harder, highly deſerving of being conſulted. In the *Diarium Medicum* of Orteſchi, a phyſician of great learning, and a particular friend of my own (vol. iv. p. 372.), is to be found a ſhort treatiſe on noſtalgia, publiſhed by Pelligrini for the advantage of the Swiſs, and it may be conſulted with utility, although he differs in ſome points from the opinions of Scheuchzer.

219. The other varieties of melancholia, when the patients conceive themſelves to be kings, or noblemen, or biſhops, or imagine that they are dead, or changed into earthen veſſels, or barrels, or that ſome parts of their body are compoſed of other materials than of fleſh and bone,

or complain of having crabs, frogs, or ſerpents within them, or when they labour under any other obſtinate and ſingular mental deluſion, have no particular name, only retaining the generic one of melancholia *. But according as the complaint originates from a morbid condition of the hypochondres, or from affections of the uterus, it is named *hypochondriacal*, or *hyſterical*. The latter of which, when it is conjoined with ſuch an immoderate deſire of venery, that the patient ſolicits every one coming in her way, is generally called *nymphomania*, or *metramania* †, or *furor uterinus*. Again, that ſpecies of furor which ariſes from love, and which ſometimes intirely differs from *nymphomania*, and belongs more properly to men, although women alſo are liable to it, is named *erotomania* ‡. Some alſo claſs among the melancholic affections *tarantiſmus*, or the *morbus ſaltatorius*, becauſe thoſe who are affected with it have the moſt ardent deſire to dance; and on a certain tune, which is called *tarantella*, and is familiar to the people in Apulia, being played, they ſpring up and dance, until they become quite exhauſted, and are all over bedewed with a profuſe ſweat. It is reported that they are thus cured. Many, with Baglivi, are of opinion that the diſeaſe ariſes from the bite of the tarantula, from which it has its name. Others, again, with Seraus, contend that this diſeaſe, independent of the bite of the tarantula, prevails as an

endemic in Apulia and other warm countries, and that it is a ſpecies of hyſterical or hypochondriacal *melancholia*. But were it in fact produced by the poiſonous bite of the tarantula, I ſhould treat of it elſewhere when I come to ſpeak of the diſeaſes occaſioned by poiſonous bites; where, in like manner, *hydrophobia*, which is occaſioned by the bite of rabid animals, although by moſt authors it is commonly referred to delirium and aberration of mind, will better come in ‖.

* Modern noſologiſts, however, give particular names to each of theſe ſpecies. Thus Sagar conſtitutes fifteen ſpecies, namely, 1. the *melancholia vulgaris*, 2. the *amatoria*, 3. the *religioſa*, 4. the *argantis*, 5. the *moria*, 6. the *attonita*, 7. the *errabunda*, 8. the *ſaltans*, 9. the *hippanthropica*, 10. the *melancholia Scytharum*, 11. the *melancholia Anglica*, 12. the *beatifica*, 13. the *Zoanthropica*, 14. *enthuſiaſm*, 15. *phrontis*. See the explanations of them in Sagar, *Syſt. Morb. Symptom.* cl. xiii. ord. iii. gen. xx. p. 743.

† *Nymphomania* is derived from Νύμφη, *ſponſa*, or more properly from Νυμφὼν, *thalamus nuptialis*, and μανία, *furor*; and it ſignifies, the furor of newly married women, or the furious deſire of the marriage-bed, or longing for a man. But we ſhall treat of it at greater length and more properly when ſpeaking of the diſeaſes of women. *Metramania*, again, is derived from μήτρα, the *matrix*, or *uterus*, μανία, and *furor*.

‡ Erotomania, from Ἔρος, and μανία, namely, the madneſs ariſing from love.

‖ Concerning *tarantiſmus*, ſee Cartheuſer (*De Morbis Endemicis*, p. 44.), who has given a ſuccinct view of all the phenomena of this diſeaſe. *Hydrophobia*, in my opinion, is not referable to the mental *hallucinations*. For it is a ſpaſmodic affection of the œſophagus and ſtomach, by which the patients are prevented from drinking. Nor are delirium and madneſs al-

ways conjoined with it. I have obſerved patients labouring under hydrophobia retain their ſenſes to the laſt hour. Concerning the bite of the mad dog, the following works may be conſulted: *Benigni Canellæ de Vigani Ripenſis Tyrolenſis diſſertatio de hydrophobia. Oenipont.* 1774. *Obſervations ſur la nature, et ſur le traitement de la rage,* &c. par. M. Portal, *Yverdon,* 1779. *Compendio di Notizie intereſſanti circa il veleno de' rabbioſi animali di* Felice Aſti *in Mantoua,* 1778. To which may be added a letter of the very learned Falethi, chief phyſician in Urbinum, to Jo. Bapt. Balbus of Bologna, *De immani quadam paſſione hyſterica et aquifuga; ubi nonnulla quoque ad hydrophobiam ſpectantia diſputantur.* Diar. Pet. Orteſchii, an. 1766. p. 196.

220. But although I have obſerved that melancholia and mania differ from one another in the manner and degree of the delirium (217.), it muſt be recollected that theſe affections are ſo nearly allied together, that, according to Willis, Morgagni *, and others, they frequently exchange places, and ſucceed to one another. Which viciſſitudes frequently cauſe the phyſician, on account of the ſilence and fear, or loquaciouſneſs and fury of the patient, ſucceeding one another, to remain doubtful whether to declare that the patient labours under melancholia or mania. Both complaints, however, are divided into *primary*, which ariſes from no diſeaſe of the body, but merely from a morbid ſtate of the brain, and *ſecondary*, which proceeds from a vitiated ſtate of the whole blood, or from an injury ſuſtained by ſome of the viſcera.

* Vid. *Epiſt. Anat. Med.* viii. n. 1.

221. Likewiſe the cauſes of both complaints are nearly in common to them. *Mania* appears to ariſe immediately from that ſtate of the brain in which ſuch a derangement of ideas takes place as gives riſe to rage, violence, and increaſed muſcular ſtrength. *Melancholia*, again, proceeds from that ſtate of the brain which obſtinately exhibits one or two ideas to the mind, which it cannot remove at pleaſure, and which affects the judgement, generally occaſioning fear and deſpondency. Such mental derangements are occaſioned ſomewhat more remotely, either by vitiated conditions occurring in, or ſituate near, the ſolid parts of the brain, or inherent in the whole body, particularly the intire maſs of blood, or ſituate in ſome viſcus, although remote from the head, or elſewhere. To the former cauſes, as appears from the diſſection of people who have died of mania or melancholia, belong dryneſs and induration, or too great laxity, ſoftneſs, and moiſture, of the cortical or medullary ſubſtance of the brain; a vitiated condition of the corpus calloſum, or medulla oblongata, or pineal gland; the ventricles being filled with water; the veſſels being diſtended with black blood; tenſion, laxity, or corruption of the meninges, or their being overſpread with bloody ſerum; polypi in the ſinuſes of the dura mater, or ſmall ſtones, and other injuries; although moſt of theſe have frequently been found in other diſeaſes of the head alſo, and are not found in every caſe of ma-

nia and melancholia. Under which head alſo ſeem to fall, a mal-confirmation of the cranium, or any kind of tumours, even external ones *, and a bad condition of the brain, either natural, hereditary, or acquired, and likewiſe blows. To the latter claſs belong all thoſe things which condenſe and coagulate the fluids, which diſperſe their finer parts, or reſolve and deſtroy their craſis, as the abuſe of fermented liquors, or ſpirits; frequent intoxication; immoderate venery; warm and dry air; inſolation; hard ſtudy; violent emotions of mind, particularly anger and grief; profound meditation; ardent love; immoderate ambition for honours and dignities, or diſappointed hope; great and ſudden terror †; bad news ſuddenly communicated; of which cauſes many, without any taint of the fluids, may ſo derange the ſenſorium commune, and injure the nerves and their origin, as readily to give riſe to theſe diſeaſes. Likewiſe thoſe things which induce plethora, and cauſe a determination of fluids to the brain, or excite an acrid dyſcraſy in the blood, as the ſuppreſſion of evacuations of blood, ichor, ſcabies, and of the hemorrhoidal or menſtrual diſcharge; the matter of ſcurvy, ſyphilis, arthritis, gout, or fever being transferred to the brain ‡; long continuance of hypochondriaſis or hyſteria; black bile contained in the abdominal viſcera, and producing irrita-

tion there, or removed, from thence diſſolved and carried into the circulating maſs; a bilious colluvies; a melancholic diatheſis; obſtructions in the lower parts of the belly; retention of various acrids; the ſanguineous, choleric, or atrabilarious temperament; and the like.

* Frid. Gabr. Gottlieb Sibern makes mention of a caſe of mania, which probably was occaſioned by an external tumour above the left parietal bone, in the neighbourhood of the lambdoidal and ſagittal ſutures, and was cured in conſequence of the tumours having been brought to ſuppurate, and being opened. *Collect. Societ. Med. Haunienſ.* vol. i. p. 86.

† Sometimes the ſenſorium commune is affected with ſo great terror, that ſuch an idea is excited in it as cannot afterwards be obliterated by any means; in conſequence of which the patient dwells on no other ſubject, even againſt his will; and this ſeems to conſtitute the worſt ſpecies of melancholia. Van Swieten, § 1108.

‡ Not only the febrile matter not being ſufficiently corrected, or its being imperfectly expelled, occaſions mania,—for this complaint frequently ſucceeds to long-continued intermitting fevers,—but alſo the retention of morbid matter of any other kind, which ought to have been expelled. Nay, the ſame effect is perhaps occaſioned by the ſecretion of the milk itſelf being ſometimes checked, not to mention its having become corrupted, or its being repreſſed.

222. But it appears from medical hiſtories that mania has more frequently ariſen from the exſiccation or imprudent checking of ſcabies, herpes, impetigo, and other cutaneous diſeaſes; from the cutting away of the plica polonica; from too

warm or too cold weather; and from the exceſſive quantity, ſtagnation, and corruption of the ſemen and ſeminal fluids, named *aphrodiſii*. But ſudden and acute mania is occaſioned particularly by the ſeeds and roots of hyoſcyomus and ſtramony, or night-ſhade, by the berries of the ſolanum furioſum, or belladonna, by the cicuta aquatica of Wepfer, and perhaps by a good many other poiſonous plants, and particularly certain kinds of deleterious muſhrooms. To theſe ſome add the poiſonous bites of particular animals, eſpecially rabid ones.

THE DIAGNOSIS.

223. THE diagnoſis of both kinds of delirium, namely, of the maniacal and melancholic one, and of their ſpecies and varieties, is eaſily collected from what has already been laid down (217. to 220.). But it is neceſſary to turn our attention particularly to preceding circumſtances, of which mention was made when I enumerated the cauſes. Hence it is proper to obſerve, that thoſe perſons, as I have already remarked (221. 222.), who have long laboured under hypochondriaſis or hyſteria, or morbid conditions, particularly ſcirrhus, of the inteſtines, in whom cuſtomary and ſalutary evacutions of blood are ſuppreſſed, who are oppreſſed with care, who indulge immo-

derate deſires, who are born of melancholic parents, and abound with thick, viſcid blood, and in whom, from various cauſes, too great a determination takes place to the head, are more liable to the complaint than others. But the approach of melancholia is announced by ſadneſs, fear, long-continued watching, and avoiding ſociety. The grief gradually increaſes, and tears are frequently ſhed, although ſome patients are perpetually laughing. They are uniformly engaged with fruitleſs and intenſe thinking, inſomuch that they very frequently remain in a ſtate of ſtupor, with their eyes fixed on the ground, or being ſuddenly rouſed by imaginary alarms, they ſigh and quicken their pace. But as the complaint increaſes they ſhun the ſight and converſation of people, retiring to ſolitary ſituations, where remaining in concealment, and wholly occupied with their imaginary diſtreſs, they live in ſilence and ſloth. Thoſe who are more ſeverely affected with the complaint conceive themſelves to be beaſts, or dead, or made of glaſs; and, therefore, ſome imitate the barking of dogs, or howling of wolves, or crowing of cocks, or, from the ſuppoſition that they are dead, reject all meat and drink; while others retire from the objects ſtanding in their way, afraid of being broken to pieces. Others, again, on the moſt trifling occaſions, have a great propenſity to fall into a rage, are remarkably fickle, and exceedingly anxious about

the moſt ridiculous trifles, being at one time liberal and prodigal, at another narrow and avaricious; ſometimes being greatly afraid of death, at others, which is ſurpriſing, they fall into deſpair, and lay violent hands upon themſelves. On the other hand, it appears that mania is threatened from obſtinate watching, headach, tinnitus aurium, unuſual laughter or irraſcibility, and moroſeneſs. When the mania at length commences, the eyes grow red, the eye-lids are thrown into very frequent motion, and the patients thus affected become talkative, quarrelſome, and obſtreperous, behaving in a moſt outrageous manner, and, aſſuming a fierce and threatening aſpect, they are apt to attack all around them with very great ſtrength. Both melancholic and maniacal patients are generally anxious, remain awake, bear the inclemencies of the weather with impunity, and, if they be not reſtrained, throw themſelves out of windows, or plunge into wells, rivers, or lakes, or in other ways endeavour to make away with themſelves. When the complaint proceeds from the hypochondres being affected, the face is pale; the extremities cold; there is frequent palpitation of the heart, and an anxiety of the præcordia frequently comes on; the reſpiration is profound and interrupted; the head is painful; the belly is bound; the inteſtines rumble; the flatus paſſes upwards; ſomething is

thrown off by eructation or vomiting, which is of a corroding, acid, or bitter taſte; the appetite is at one time keen, at another there is none at all; and the pulſe is rare, ſlow, or irregular and languid, or very variable. But when the diſeaſe proceeds from the uterus, or hyſteria; a ſenſe of ſuffocation; an irregular or defective flow of the menſes; fluor albus; copious, watery urine; teneſmus, ſtrangury, or iſchuria; emiſſions and tentigo; various kinds of tumours, pains, and inflations of the hypogaſtrium, ovaria, or uterus, occur. Similar ſymptoms, in like manner, happen in hypochondriacal patients, ſometimes merely from increaſed ſenſibility of the nerves. A knowledge of the remaining varieties and cauſes from which they ſpring, may be obtained, partly from the ſymptoms above enumerated, partly from the retroſpect of paſt circumſtances.

THE PROGNOSIS.

224. On the whole, all the ſpecies of inſania are difficult of cure. The hereditary ſpecies, or that derived from a morbid ſtate of the brain, affords ſcarcely any hope; and if it ever becomes dormant it is apt to return. In like manner the *primary* one, or that which depends upon a phantaſy and mental illuſion, unconnected with any morbid condition of the body, is difficult of cure;

for it indicates ſome injury of the internal ſtructure of the brain. On the other hand, the *ſecondary* ſpecies, occaſioned by the ſuppreſſion of evacuations, errors in diet, or a morbid ſtate of body, more frequently is reſtored by art and time. That which is accompanied with laughter and joy is ſafer than the ſpecies which is attended with thought and grief. Likewiſe, when the complaint is recent it is ſometimes cured, but ſcarcely ever when it is of long ſtanding. In general we may expect a return of health from an epiſtaxis taking place, from the return of the hemorrhoidal or menſtrual diſcharge, from a diarrhœa, from varices of the legs, from dropſy, from ſcabies, from a quartan and other intermitting fevers, from an abſceſs, from change of air, weather, and place, and from advancing in life. Some of the prognoſtics of Hippocrates apply to this part: "If varices or hemorrhoids ſupervene in people labouring under inſania, a ſolution of the diſeaſe takes place *. Dyſentery, or dropſy, or an emotion of mind, occurring in mania, afford a favourable prognoſtic †. A pain attacking the feet or cheſt, or a violent cough ariſing, reſolves mania ‡. If the complaint be reſolved without pain in the feet or breaſt, or violent cough, blindneſs enſues ‖." But ulcers ariſing in the face or feet ſcarce afford any favourable expectation, while no hope is left by the total loſs of appetite. On the other hand, we have reaſon to form favour-

able expectations from herpes and ſerpigo breaking out ſomewhere; for nothing alleviates diſeaſes of the head more than the tranſlation of ſuch an acrimony to the ſurface.

* Aph. 21. ſect. vi. † Aph. 5. ſect. vii. ‡ *De Indicat.* 65. ‖ *Ibid.*

225. Hypochondriacal or hyſterical melancholia is generally much more eaſily cured than the other ſpecies of the complaint. Black ſtools being paſſed frequently prove critical *. It more frequently attacks men, particularly thoſe advanced in life, than women, but in the latter proves more obſtinate and dangerous. Sometimes melancholia paſſes into epilepſy, and epilepſy is again changed into melancholia. It is ſometimes ſucceeded by conſtant fatuity, convulſions, and apoplexy. The author of the *Coacæ Prænotiones* obſerves: "When tremors ſupervene in violent and furious mental derangement, they prove fatal *." Likewiſe, "grinding of the teeth, contrary to cuſtom ‡, or their becoming dry ‖, denote a fatal termination." Death is known to be approaching, if coma, epilepſy, or loſs of ſtrength ſupervene. Sleep, if it be tranquil, generally alleviates every ſpecies of inſanity. But we muſt not rely upon every remiſſion which takes place, for the diſeaſe is quickly and unexpectedly aggravated.

* *Coac.* N. 486. † Num. 93. *et Præd.* 1. 14.
‡ *Coac.* N. 235. ‖ *Ibid.*

THE CURE.

226. In every ſpecies of mania and melancholia, and particularly in that which proceeds from derangement of the ideas, and a morbid condition of the ſenſorium commune, rather than a faulty ſtate of the body, change of place, and of the manner of life, become highly neceſſary. For by travelling, by the motion of the body, and by the occaſional ſucceſſion of new objects, the falſe, inordinate, or fixed ideas are gradually obliterated or brought back to their proper order. All thoſe things ought to be removed by which the patient's love, rage, hatred, or grief, were formerly occaſioned, and he muſt be amuſed with games, ſinging, concerts, and the agreeable converſation of his friends. This treatment is particularly calculated for melancholic patients. Moreover, noſtalgia requires purer air, and a more elevated ſituation, a manner of life conformable to that of the patient's native country, and, laſtly, his return home, which is ſuperior to all the other remedies.

227. Bleeding is more frequently adapted to maniacal than melancholic patients; and chiefly when plethora, or the ſuppreſſion of ſome evacuation, or heat of the air, or exceſs in drinking

wine, haye given riſe to the complaint. The jugular veins, or the vena frontis, or even the temporal arteries, may be opened with advantage in this caſe. Moreover, it is ſerviceable to open the belly by means of medicines repeated after a certain interval, employing milder ones in the ſanguineous and bilious temperament, and ſuch as are more acrid and powerful in the phlegmatic one, among which black helebore, and its extract, hold a principal rank.

228. Mutzell has frequently been ſucceſsful in removing melancholia ariſing from grief, an indolent life, and a morbid condition of the hypochondriacal viſcera, by giving every day a potion compoſed of half an ounce of the tartarus tartariſatus, two drachms of the extract of leſſer centaury, and eight ounces of water. When bitters were rejected, in place of the extract he ſubſtituted as much purified honey as ſeemed neceſſary, occaſionally interpoſing laxatives. He mentions by this method having repeatedly extirpated, not only melancholia, but mania itſelf. For in this manner the black bile is reſolved, corrected, and thrown off.

* *Comment. de Reb. in Med. et Scient. Nat. geſt.* vol. iv. p. 92. *et ſeq.*

229. In maniacal patients of a warm temperament, who are young, of a good habit, accuſtomed to an active life, and to uſing heating

things, every thing aceſcent, nay, the ſtronger acids themſelves,—by means of which the heat of the blood, its tenuity and alkaline acrimony, too great ſenſibility of the nerves, and exceſſive irritability of the fibres, are allayed,—afford the greateſt benefit. On which account likewiſe the drinking of cold water is greatly recommended. Diſtilled vinegar, in which, when warm, half a drachm of camphor has been diſſolved, with ſugar and gum-arabic, and afterwards diluted with the water of elder-flowers, is highly extolled by Locher, and others after him *. And medical hiſtories mention, that caſes of mania, which had baffled all other remedies, have been cured by camphor alone, its doſe being gradually increaſed to a drachm, and even more in day †. But from repeated trials I have found, that from the employment of this remedy, maniacal patients, who ſeemed to have become ſomewhat calm, whenever they reſumed the camphor, ſometimes relapſed into their fury; probably becauſe it increaſes the force of the heart, and accelerates the circulation, augmenting the heat, and cauſing the expanſion of all the fluids. In this caſe its employment is probably rendered more tolerable by taking it diſſolved in vinegar. Hence phyſicians of no ſmall repute are of opinion, that it proves more ſerviceable to melancholic patients, and thoſe who are, as it were, in a ſtate of ſtupor, having a ſmall, ſlow, and weak pulſe, than in other

caſes. Mutzell, however, adminiſtered half an ounce of camphor daily to a patient labouring under melancholic ſtupor for the ſpace of two weeks, without experiencing any good effect ‡. So great frequently is the combination of inſuperable cauſes, and variety of circumſtances, that even the beſt remedies do not always anſwer our expectations; nay, ſometimes they produce the very contrary effect. But if it be allowable to pronounce any opinion on the ſubject, I ſhould ſuppoſe that camphor is ſerviceable only when the *ſenſibility* of the nerves ſeems to be too great, but not the irritability; and that it proves hurtful, or nugatory, when the former is languid or torpid, or the latter exceſſive, and the veſſels not ſufficiently emptied. For camphor certainly diminiſhes the *ſenſibility*, but increaſes the *irritability*, and heat of the blood ‖.

* Locher. *Obſervat. Pract. circa Luem Vener. Epilepſ. et Man. &c. Vienn.* 1762. p. 57. *et ſeq.* Orteſchi, *Giornal. Med.* 1765. p. 10. Locher employed the following formula: Rec. Camphor. drachm. ſemis, ſachar. canar. mucilag. gumm. arabic. an. drachm. j. His invicem in mortar. marmor. trit. add. acet. calid. unc. ſemis, aq. flor. ſambuc. unc. vj. ſyr. flor. pap. rhœad. unc. j. M. † Kinneir, in a work intitled, *Saggio delle Tranſazioni Filoſofiche di* Tommaſo Derham, vol. iv. p. 90. *et ſeq.* Craen, *Prax. Med. Reformat.* p. 132. Hoffman, *Med. Syſt.* T. iv. P. iv. c. viii. obſ. 8. Orteſchi, *Giorn. Med.* T. 2. ann. 1763. p. 373. Dall' Arme, *Sagg. di Med. Pratic.* P. ii. oſſerv. 13. c. 14. Boenneken *in Collect. Francon. &c.* vol. v. P. xxviii. p. 294. & *in Comment. de Reb. in Med. et Scient. Nat. geſt.* vol. xi. p. 525. ‡ *Comment. Cit.* vol. iv. P. i. p. 93. ‖ Vid. *Theſes de Camphora, ejuſque virib. a* Se-

baſt. Severio *in Gymnaſ. Ticinenſ. Propug.* ann. 1776. *et* Baſſian. Carminati, *De Animalium ex Mephitib. et Nox. Halitib. Interitu*, &c. l. 3. c. 3. p. 191.

230. The outrageous fury of maniacs is very frequently ſubdued by the tepid bath, which proves moiſtening, relaxing, promotes the perſpiration, and very effectually derives from the ſurface. Nor is this remedy of leſs utility to patients labouring under melancholia, becauſe by it the whole body is ſo changed, that even that obſtinate and fixed inflexion of the fibres, by which particular images of ideas are repreſented to the mind, at length, if I may be allowed the expreſſion, being in ſome meaſure relaxed, is ſmoothed and obliterated. But this will more readily and certainly happen, if, while the whole body is ſoftened with the ſteam of the hot bath, and rendered permeable, cold water be poured upon the head previouſly ſhaved. It will be proper to conſult an account of mania accompanied with priapiſm which De Monchau cured in this manner *. The learned Orteſchi, lately deceaſed, in his Medical Journal, has mentioned, as a ſurpriſing circumſtance, an hyſterical mania having been cured in a ſimilar manner by Pommius, who had recourſe to the employment of the bath for eight hours every day, and the conſtant application of rags wet with cold water to the head,—a cure which ſeems almoſt incredible †. But long before that

my learned and ingenious friend, Ghis of Cremona, had recovered maniacal patients, by making them drink copiouſly of the very coldeſt water, and by the affuſion of it twice or thrice a-day upon the head ‡.

* Orteſchi. *Giornal. Med.* T. 4. p. 105. † *Id. ib.* T. 2. p. 412. *Lettere Mediche*, Lett. 1. p. 24. & ſeq.

231. But it is not only of the higheſt ſervice to employ the affuſion of the coldeſt water upon the head, but alſo to immerge the whole body in the cold bath *, which has proved of the greateſt advantage, particularly to thoſe who have fallen into the complaint in the prime of youth and ſtrength, while in a plethoric ſtate and during a very ſultry ſummer, after a debauch in drinking ſtrong wine. Inſtances which ſufficiently prove that fact are to be found in the works of Van Swieten † and others, which may be conſulted at pleaſure. But one which has been recorded by that ingenious phyſician and mathematician, Michellott, a countryman of my own, deſerves particular notice. A young man, during a ſea-voyage, after having been long expoſed to the heat of the ſun, and having drunk wine to exceſs, was ſeized with a very acute mania, but at length got intirely rid of it in conſequence of undergoing copious bleedings, being put upon a very ſpare diet, drinking cold water, and the affuſion of it on

the head having been employed; which was the method of cure prescribed by this author ‡.

* Meade, *De Venen.* p. 139. 140. † *Comment. in* Boerhaav. § 1127. See also Orteschi, *Giornal. Med.* T. 4. p. 124. Willis, *Pathol.* c. x. ‡ *Hist. de l'Acad. des Scienc.* an. 1734.

232. Authors are not agreed as to the effects of opium in mania and melancholia. Some assert that it is of the greatest utility; others, again, blame all kinds of narcotics, and affirm that they are highly pernicious. I do not doubt that both sets speak from experience; but how difficult and uncommon a thing is it to estimate experience as it ought to be! Van Swieten tells us, that a physician, who was celebrated for his treatment of maniacs, used to give his patients two grains of opium in the morning, and the like number in the evening, and, if sleep was not procured, he increased the dose gradually, until he obtained the desired effect. And, in fact, I have found nothing more efficacious for preventing watching, and allaying excessive sensibility and mental derangement,—after the necessary evacuations have been employed, and the patient's strength somewhat reduced,—than opium, of which although experience has shewn that patients can bear great doses sometimes without injury, I would not advise the proceeding to very large doses, but with the utmost caution, and beginning with

ſmall ones. For as in particular idioſyncraſies and conſtitutions it ſometimes increaſes the heat and motion of the blood, redneſs of the face, watching, and reſtleſſneſs, ſo in others, even when given in a ſmall doſe, it unexpectedly occaſions a fatal lethargy. We muſt not, therefore, have recourſe to this otherwiſe very uſeful remedy without mature deliberation. On which account, ſome phyſicians make a practice of beginning with preparations of white poppy, and afterwards proceed, as occaſion ſerves, to the cautious uſe of opium itſelf. Its gummy extract, ſeparated from the deleterious and noxious reſin, is now conſidered as ſafer †. But Meade himſelf, although no great friend to ſoporifics, grants that they may be employed when the patients are agitated with great terror, or exhauſted with watching ‡.

* L. c. § 1127. † Opium conſiſts of two parts, namely, a gummy and reſinous one. The reſinous part poſſeſſes a particular poiſonous and ſtupifying property, hurtful to the nerves, while the gummy part is of an anodyne, ſedative, and gently-ſoporific quality. Beaumè invented a method of ſeparating the gummy from the reſinous principle, by which the opium is much improved: but as his proceſs requires a very long time, the extract, as it is called, is ſcarcely ever to be found prepared in the ſhops. Thanks are therefore due to Bouquet (*Mem. de la Soc. Roy. de Med.* vol. i. p. 403.), who has taught a much more eaſy way than that of Beaumè, of preparing the gummy extract of opium. It is put into a mortar, and ſlightly triturated. The coldeſt water is then poured upon it, when it is again triturated ſo as to tinge the water with its colour. The water thus coloured is decanted. Freſh

water is poured upon the remaining opium, and this is repeated until the water is no longer tinged. The water thus drawn off and ſtrained ought to be evaporated by means of a gentle heat. The reſiduum is the gummy extract, deprived of the pernicious and narcotic part.

‡ *Monit. et Præc. Med.* c. 3. p. 51. *ed. Lond.*

233. Among the ſedatives and narcotics in our times, the extract of hyoſcyomus, or more properly its juice, inſpiſſated over a ſlow fire, has begun to be recommended as an efficacious and excellent remedy in maniacal and melancholic delirium. But Greding, in conſequence of having performed twenty-ſix accurate experiments upon the ſubject, is convinced, and wiſhes to inculcate the ſame idea into the minds of others, "that hyoſcyomus can neither be uſed with ſafety internally, nor is to be conſidered as a ſalutary remedy in melancholic and maniacal complaints *."

* *Adverſ. Med. Pract.* Ludwig. P. i. p. 71.

234. If a perſon does not agree with uſing opium, or if it does not produce a ſufficient effect, or the efficacy of the extract of hyoſcyomus is ſuſpected, with the ſame view muſk may be employed. For it occaſions a very gentle diaphoreſis, and induces ſleep; and is therefore employed in mania with ſucceſs, as a reſolving and anodyne medicine *. We are informed by Wall and Locher, that muſk conjoined with cinnabar was employed with great advantage in the

caſe of a man labouring under *erotomania* †. Sebaſtiani reſtored a maniac in the fortieth year of his age, by twice giving him the *pulvis Tunquinenſis*, which conſiſts of ſixteen grains of the beſt muſk, and twelve grains of native and antimonial cinnabar ‡. Brooks, in his General Diſpenſatory, mentions having given a maniac, with equal advantage, twenty grains of muſk for a ſingle doſe ‖. Two things, however, are to be obſerved in the exhibition of this remedy, namely, that it ought to be given liberally, and its heat and power ought to be mitigated by means of nitre and other correctives: otherwiſe it either produces no good, or occaſions very troubleſome agitation and heat.

* Lang. *Miſcel. Verit.* faſc. 1. p. 98. † *Philoſ. Tranſ.* n. 474. Locher. *Oper. Cit.* p. 62. Haartman. *Act. Acad. Reg. Scient. Suec.* vol. xxiii. p. 267. ‡ *Act. Acad. Elect. Mogunt.* T. ii. p. 483. ‖ Ludwig. *Comment. de Reb. in Med. et Scient. Nat. geſt.* vol. v. p. 425.

235. Nymphomania, in the ſame manner as ſatyriaſis * in men, is generally oppoſed by repeated bleeding; by cathartics; by watery drink mixed with nitre; by the bath, particularly the cold bath; by the conſtant application of fomentations of the ſame nature; by a vegetable diet, and that too a ſpare one; and, laſtly, when it is allowable, by marriage, which is undoubtedly the moſt effectual remedy. Although I have ſeen the furor uterinus in women married to able

men, which continued with the utmoſt obſtinacy for ſome weeks, nay, for months, and did not ceaſe until conception took place. It has ſometimes been neceſſary to reſtore women labouring under this furious deſire to a ſenſe of modeſty, by preſcribing abſtinence, and by ſeverely reprimanding and flogging them.

* Tentigo, or an erection of the penis, unaccompanied with the venereal deſire, is properly named *priapiſm*, and, when accompanied with it, *ſatyriaſis*.

236. I once reſtored to perfect health a young man labouring under mania of long ſtanding, after having diſcovered the cauſe of the complaint, namely, an impetigo, to which he had been accuſtomed, having been forced in, by repeated bleeding, cathartics, the tepid bath, the affuſion of cold water on the head, whey, and camphor; —by which laſt, however, I repeatedly found that he was thrown into greater fury;—by nitre, the milk expreſſed from the cold ſeeds; and, laſtly, by opiates. I then gave him the *æthiops antimoniatus*, twice every day, for upwards of forty days, in conſequence of which he not only gradually recovered his underſtanding, but alſo the impetigo was brought back to its former ſituation, namely, the metacarpus of one hand; and he remains in perfect health to this day, although ſeven years have already elapſed. I muſt likewiſe here take notice of the cure of a chronic

mania which Schlichting deviſed and performed with the greateſt ſucceſs *. After cauſing the head to be ſhaved, he rubbed it twice a-day with mercurial ointment, until a ſalivation was occaſioned, by which the patient was reſtored to perfect health. And Mutzell at length removed a caſe of melancholy which had degenerated into the moſt profound ſtupor, and baffled every remedy in a very remarkable manner, by the inoculation of ſcabies †.

* *Nov. Act. Phyſ. Med. Acad. N. C.* T. i. p. 346.

† Orteſchi, *Giorn. Med.* an. 1762. N. 28.

237. The marvellous ſtories which are told concerning aſſes blood, received from the veins of the neck or ears upon linen rags, and afterwards diſſolved with the water of the flowers of hypericum, and expreſſed with a little vinegar, as a ſpecific for the complaint, when drunk off by patients labouring under mania,—with ſubmiſſion to Hoffman * and Boennecken †,—ſeem to deſerve being credited rather by old women than by rational phyſicians. With regard to caſtration, which Lieutaud propoſes ‡, and the employment of ſaccharum ſaturni, from two to eight grains, in order to allay the furor, I ſhould ſtrictly forbid them, the one as being a cruel remedy, and not void of danger, the other as being a ſlow poiſon.

* *Med. Syſt.* T. iv. P. 4. c. viii. § 23. † *Bigæ Caſuum Med. &c.* 1744.; and Orteſchi, *Giorn. Med.* T. ii. p. 158.

‡ *Préc. de Med.* l. i. ſect. 2. p. 206. *ed.* 1761, *Paris.*

238. When the furor has been occaſioned by the ſwallowing of poiſonous ſubſtances (222.), and the cauſe of the complaint is ſoon diſcovered, we muſt haſten to employ emetics, and oily and fatty remedies, mixed with tepid water, in order as quickly as poſſible to expel the hurtful matter upwards and downwards. Likewiſe, the repeated throwing in of relaxing injections, to remove whatever is contained in the lower part of the inteſtines, will prove of the greateſt ſervice. Milk alſo, drunk abundantly, is well calculated for obtunding the acrimony of the poiſon, particularly when it is of a cauſtic nature. But nothing is more efficacious in correcting ſuch a poiſon, particularly if it be of the vegetable kind, when once it has begun to paſs into the blood, than the vegetable acids, and particularly pure vinegar, or that which is diluted with water.

239. The diet of all patients labouring under mental affections requires the ſtricteſt attention being paid to it. That of maniacal patients ought to be more ſpare than what is allowed to patients labouring under melancholia. The latter may be allowed ſome wine occaſionally, to remove the terror and grief with which they are affected. But particular care muſt be taken to prevent their fury or deſpondency from hurrying them on to commit ſome deſperate action. It is proper, therefore, to watch them with the utmoſt care,

and even to bind them with ropes, if neceſſary; ſometimes exhorting and ſoothing them with humanity, at other times harſhly reprimanding them, and forcing them to obedience. Melancholic patients have frequently been cured by ſome ſudden and violent emotion, in conſequence of which the obſtinate and permanent idea with which their mind is poſſeſſed is obliterated. We muſt therefore correct their mental deluſion by ſome fraud, employing ſometimes one, ſometimes another ſtratagem, for their recovery, as may appear adviſeable *.

* The French ſet great value upon a work intitled *De Melancholia et Morbis Melancholicis*, publiſhed at Paris in the year 1765, by Lorry, which it may be proper to conſult.

FATUITY.

240. It remains for me, as I formerly promiſed, to ſay ſomething concerning *fatuity*, which the Greeks name *moroſis*, or *moria*. In it the patient is neither furious, nor ſad, nor timorous, nor anxious, nor exhauſted with want of ſleep, but labours under imbecillity both of judgement and memory, inſomuch that remaining dull and deſtitute of reaſon like an infant he is delighted with mere trifles, purſuing abſurd and ridiculous amuſements, without being hoſtile either to himſelf or others. It is therefore diſtinguiſhed from the other caſes of mental derangement, of which I have hitherto ſpoken, according to the general

conſent of phyſicians, by being a weakneſs or defect of the intellectual operations and memory, without any fury or inordinate motion of the body, or fear, grief, or fever *. Some conſider *fatuity* and *amentia* as ſynonymous terms. Amentia, or *anoia*, however, ſeems to be the height of idiotſy, in which every ray of reaſon appears to be obliterated, or wholly overpowered †. But as this mental imbecillity proceeds from a cauſe which generally cannot be removed, ſuch as a mal-conformation of the head, or from the texture of the brain being injured, or indurated, or from ſome other irremediable morbid condition, frequently born with the patient, or occaſioned by preceding diſeaſes, it can hardly be admitted among the diſeaſes which fall under the power of medicine. For who can expect ever to be able to remove decided fatuity?

* Caldan. *Inſtit. Pathol.* § 303. Vogel. *Op. Cit.* § 750.

PART II.

CHAPTER VIII.

OF CONVULSIVE AFFECTIONS.

241. FROM the injuries of the animal functions and internal ſenſes, and the morbid conditions of voluntary motion, of which we have hitherto treated, we proceed in order to the diſeaſes conſiſting in increaſed animal motion. If, therefore, any part, or the whole body, be at one time contracted, at another relaxed, and affected involuntarily with alternate and unuſual motions, it is ſaid to labour under clonic or convulſive motion, or, to uſe the pure Latin of Celſus, *nervorum diſtenſio* *. But if it become tenſe and rigid, without any intervening relaxation, and if this takes place with an uniform and violent action of the muſcles deſtined for flexion or extenſion, or of any of the other ones whatever, pathologiſts ſay that in ſuch a caſe a tonic *motion* and *ſpaſm*, as the Greeks call it, or,

according to the Romans, what is called *conductio*, and *nervorum rigor*, take place †.

* L. 3. c. 23. p. 172. *ed. Comin.* † *Id.* l. 4. c. 3. n. 25. *ed. Comin.* Cœl. Aurelian. *Acut. Morb.* l. 3. c. vi.

242. To the firſt claſs (241.) ought to be referred, epilepſy, of which I ſhall hereafter ſpeak at greater length, irregular convulſive motions, hyſterical and hypochondriacal convulſions, and St Vitus's dance, or the ſcelotyrbe of Sauvages, which is an alternate and irregular commotion of the legs, feet, and ſometimes of the hands, or rather an involuntary and inordinate kind of dancing, or geſticulation, occaſionally accompanied with confuſion of mind, and an impediment of the ſpeech; laſtly, trembling cold, and febrile ſhivering and rigor. To theſe ſome add *tarantiſmus* *, which, as I have already obſerved (219.), more properly appears to be a very ſtrong propenſity to dancing, and is generally conjoined with ſome degree of mental derangement. To the ſecond belong (241.) tetanus; emproſthotenos; opiſthonos; ſpaſmus cynicus; riſus ſardonicus; ſquinting; wry-neck; ſpaſmus phyſodes, or flatulentus, commonly called the *cramp*; ſatyriaſis; priapiſm; and other ſpaſms affecting ſome particular part, of which I ſhall ſpeak in their proper places.

* Platner, *Art. Med.* § 644.

243. In *tetanus* the antagoniſt muſcles of the

whole body are ſo contracted, that the patient becoming univerſally motionleſs and rigid, can bend himſelf in no direction, being as ſtiff as the trunk of a tree, the ſenſes however remaining intire. But if only ſome parts be affected with ſuch a degree of rigidity, the affection is then named *partial tetanus*, to which, in particular, belong emproſthotenos, opiſthotonos, and other particular ſpaſms. In *emproſthotenos* the muſcles which bend the body forward become tenſe and rigid, and bend it in that direction *. Laſtly, *opiſthotonos* takes place when the body, for the oppoſite reaſon, is bent backwards †. Phyſicians aſſert that the body becomes ſpaſmodically affected chiefly in theſe three ways, and deny that it can be bent otherwiſe. Morgagni ‡, however, adduces an inſtance from Valſalva of a certain ſpaſm by which the body was bent to one ſide ‖. Before Valſalva Fernelius obſerved ſome ſymptoms of it in a patient who every year in the winter-time was attacked with various ſpaſms twice or thrice a-day §. In the paroxyſm his head was firſt affected with a particular kind of ſhaking at intervals; after which the complaint gradually paſſed down the back of his neck, accompanied with a ſenſe of cold. When at length it arrived between the ſcapulæ, his mind and ſenſes ſtill remaining uninjured, the body became affected with opiſthotonos. But when it paſſed downwards to one or other ſide, or arm, or leg, the limb immediately be-

came ſo powerfully contracted, that the by-ſtanders were incapable of extending it by employing any degree of force. De Haën, again, had an opportunity of obſerving a man labouring under tetanus, who was ſometimes bent to the left ſide ¶; and alſo a woman, who, in conſequence of a violent twiſt of the head, being ſeized with wry neck at intervals, was bent to the left ſide in ſuch a manner as to reſemble the leter C. He named this ſpecies of tetanus *pleurothotonos*, and, in oppoſition to the opinion of Mercurialis and Sorbait, rightly judged that it ought to be ranked in the fourth place. Others name it *lateral tetanus*.

* The head is bent forwards by the *ſterno-maſtoideus*, the *cleido-maſtoideus*, the *rectus anticus major*, and the *rectus anticus minor*; the neck by the *longus colli*; the ſpine by the *pſoas parvus*; the femur by the *pſoas magnus* and *iliacus internus*. Of which one is placed on each ſide.

† The head is bent backwards by the *ſplenius capitis*, by the *biventer cervicis*, by the *complexus*, by the *trachelo-maſtoideus*, by the *obliquus ſuperior*, by the *rectus poſticus major*, and the *rectus poſticus minor*. Theſe alſo are double. The neck is bent backwards by three pairs of muſcles, namely, the *ſplenius colli*, the *ſpinalis cervicis*, and *interſpinales cervicis*. The ſpine, again, is bent back by the *ſacro-lumbalis*, or *lumbo-coſtalis*, by the *multifidus ſpinæ*, the *longiſſimus dorſi*, the *ſpinalis dorſi*, the *interſpinales dorſi*, and the *interſpinales lumborum*.

‡ *De Sed. et Cauſſ. Morb.* Ep. x. n. 2. May not ſuch an inflexion, on account of its having happened on the fifth day, when the patient died, be derived from the paralyſis of the oppoſite?

‖ The head is bent to a ſide by the *rectus lateralis*, the neck by the *anterior* and *poſterior intercoſtals*, by the *ſcalenus quadruplex*, *anticus*, *poſticus*, *tertius*, and *quartus*; the ſpine by the *quadratus lumborum*, by the *intertranſverſales dorſi*, and *lumborum*, *&c.* Vid. Plenck, *Prim. Lin. Anat.*

§ *De Part. Morb. et Symp.* l. v. c. 3. p. 135. n. 30.

¶ *Rat. Med.* T. x. c. iv. p. 135.

244. The *ſpaſmus cynicus* is a diſeaſe of the lips. For if, in conſequence of the muſcles of the face in one or both ſides being contracted, they are drawn towards the ears, in ſome meaſure reſembling the mouth of a ſnarling dog, they are ſaid to be affected with the *cynical ſpaſm*, or, as others call it, *diſtortion of the mouth*. The *riſus ſardonicus*, in the opinion of ſome, does not ſeem to differ from the cynical ſpaſm, ſince they conſider it as conſiſting in the ſame diſtortion of the mouth; or, if they grant that any difference ſubſiſts between them, they affirm that it lies in the riſus ſardonicus being alſo accompanied with delirium. It is a diſeaſe ſuppoſed to be occaſioned by the herb *ſardonia*, or apium riſus, named alſo by ſome botaniſts *ranunculus ſceleratus*. Be this as it may, I rather incline to the opinion of thoſe who imagine that the riſus ſardonicus takes place when the lower jaw, together with the muſcles of the tongue and larynx, which are ſubſervient to the voice, are convulſed and thrown into motions reſembling a perſon laughing. It frequently happens, that in hyſterical affections, which ariſe

from this cauſe, in concurrence with a ſpaſmodic motion of the thorax and diaphragm, the moſt immoderate laughter takes place without the ſardonia having been eaten.

245. *Strabiſmus* is that ſpaſmodic inverſion of the eye, in conſequence of which the optical axis, as Sauvages affirms *, is forced to diverge. It ariſes when the muſcles which move the eye are irregularly ſtretched, or any of them convulſed with violence. For the eye is drawn to that part which correſponds with the convulſed muſcle. It is alſo that morbid direction of the eyes which is occaſioned by the antagoniſt muſcle prevailing, in conſequence of any of the others having become paralytic; but this ſpecies of it belongs more properly to paralytic, than to ſpaſmodic and convulſive diſeaſes.

* *Noſol.* cl. iv. ord. 1. gen. 1.

246. *Obſtipitas* is ſaid to be preſent, when, in conſequence of ſpaſm of the neck, the head is rendered immoveable, or is bent in a particular direction, in which it obſtinately remains. The *ſpaſmus phyſodes* is occaſioned by the ſudden, tranſient, and painful contraction of one or ſeveral muſcles in ſome parts, happening chiefly in the hands and feet, or legs, accompanied with a moſt troubleſome ſenſation. As in it the extenſors or flexors are affected, the limb is either violently ſtretched or contracted. It has received its name from flatus, becauſe the ancients ſuppoſed that it

was occaſioned by it. Laſtly, a rigid, obſtinate, involuntary, troubleſome, and painful erection of the penis, conſtitutes *ſatyriaſis* and *priapiſm*. The former is accompanied with the venereal deſire, and the latter, as I have already ſaid, is without it.

247. To the ſpaſmodic and convulſive motions (241.) may likewiſe be referred, *hyſterical ſuffocation*, and the *globus hyſtericus*, or *hypochondriacus*, which in women and hypochondriacal men riſes up to the throat; *hiccup*, *vomiting*, *cough*, *angina*, and *convulſive aphonia*; ſometimes *aſthma*, ſometimes *palpitation* of the heart, ſometimes *incubus*, or *ephialtes*, *triſmus*, whether the grinding of the teeth, or the forcible drawing of the lower jaw towards the upper one *,—for I obſerve the word employed to denote both theſe ſymptoms,—clonic motions of the palpebræ and eyes, as *winking*, likewiſe yawning, ſtretching, and ſimilar affections, which are generally ſymptoms of other diſeaſes.

* This diſeaſe not unfrequently occurs in newly-born children and infants, and often proves fatal.

248. Therefore ſpaſmodic and convulſive diſeaſes ought to be divided into *univerſal* and *partial*, into *internal* and *external*, into *primary* and *ſecondary*, into *idiopathic*, *ſympathetic*, and *ſymptomatic*, &c. But no one acquainted with the ſtructure and functions of the human body will

deny that the internal as well as the external parts of the ſyſtem are very frequently convulſed, in conſequence of which innumerable affections, which were formerly aſcribed to flatus, vapours, and the uterus, ariſe. Laſtly, when the whole body is affected with *clonic* or *convulſive motions*, in ſuch a manner that the ſenſes and ſpeech are not affected, *ſimple convulſions* are ſaid to take place, which ought to be diſtinguiſhed from true and perfect epilepſy, in which the whole body, to be ſure, is convulſed, but the internal and external ſenſes are intirely ſuſpended, and ceaſe, as will appear hereafter.

THE CAUSES.

249. THE proximate cauſe*, as it is called, of all theſe affections, is a violent and involuntary contraction either of the muſcles of the whole body, or of particular parts, according as the intire body, or only certain parts, are affected, which it is highly probable is induced by a morbid degree of irritability of the ſyſtem. This power in the clonic motions, either irregularly, or at intervals, impels each of the muſcles, or the antagoniſt ones only, alternately to contract themſelves; but in the tonic motions it inceſſantly forces all of them together, or the antagoniſt ones only, to contract. I muſt not, however, omit to notice, that it is

not always requiſite that the irritability ſhould be exceſſive; but that it is ſometimes ſufficient that it be ſo diminiſhed in the antagoniſt muſcles, that thoſe which are found ſurpaſs in ſtrength and exertion the other ones in a ſtate of languor and relaxation.

* According to Boerhaave and his followers, among whom a principal rank is held by Ant. Cocchi, a phyſician of great learning and celebrity (*Bagni di Piſa*, c. 4. p. 202.), the proximate cauſe of ſpaſms and convulſions is made to conſiſt in the irregular diſtribution of the nervous fluid, either from an organic injury of the brain itſelf, or from irritation propagated to it by the nerves, or in the abundance and morbid condition of the other fluids.

250. The *irritability* is increaſed, either by the will, or in conſequence of the condition of the *ſenſorium commune*, which is required for the natural exerciſe of ſenſe and motion, being deranged; or in conſequence of the circulation of the blood and other fluids through the veſſels of the brain, nerves, or muſcles, having become defective, or being rendered unequal; or, laſtly, in conſequence of irritation communicated to the nerves or muſcles. Whatever, therefore, can derange, vellicate, or in any other way injure the brain, nerves, or muſcles, cauſing an involuntary motion or contraction of all or any of the parts, will prove alſo a remote cauſe of increaſed motion, and, therefore, of convulſions of any kind.

251. Of the remote cauſes, again, ſome are prediſpoſing, others exciting. To the prediſpoſing ones I refer, exceſſive natural or acquired irritability; very great ſenſibility; the ſanguine and bilious temperament; a ſpare habit, and delicate ſtate of all the fibres; a mal-conformation of the head; a peculiar hereditary tendency to nervous affections; violent affections of mind, and long-continued anxiety; exceſſive indulgence in venery, wine, and in the uſe of ſalt, acrid, and acid articles of diet. But theſe cauſes are ſo ordered that they may ſometimes act, not only as prediſpoſing, but alſo as exciting ones.

252. Under the head of the exciting cauſes chiefly fall, rage; terror; bad news; a taint of the hypochondres, uterus, and other abdominal viſcera; pungent ſmells, poiſonous halitus; acrid, or putrid humours, collected, effuſed, or ſtagnating within the ſkull or tube of the vetebræ, irritating the cerebrum, cerebellum, medulla oblongata, and medulla ſpinalis; and every thing which in particular can puncture, vellicate, preſs on, diſtract, or intimately derange the very ſenſible fibres of the medulla of the brain and nerves, or can accelerate, or retard, or irregularly promote the circulation of the blood, lymph, and nervous fluid, in the veſſels of the brain, ſpinal marrow, ganglia, nerves, and muſcular parts *.

* Haller (*Elem. Phyſ.* vol. iv. l. 10. ſect. vii. § 27.) has remarked in point: "Doubtleſs, in conſequence of the me-

dulla of the brain being ſomewhat deeply irritated, horrible convulſions are excited all over the body, as we have long remarked. We have quoted experiments; but diſeaſes produce the ſame effects. Convulſions have been obſerved to ariſe on compreſſion of the brain (Blancard, *Op. Chirurg.* p. 556.), and from its being wounded (Kaavw. n. 325.); from the ventricles of the brain being filled with water (Saviard. obſ. 89. Apperley, obſ. p. 118. Bonet, *Prodrom. Anat. Pract.* c. 76. *De Convulſ.* obſ. 1. to 9. Bartholin. cent. iii. hiſt. 80. Rhod. cent. i. obſ. 49. Harder. Apiar. obſ. 33.), with ſcirrhus of the choroid plexus (Willis, p. 131. 114.), conjoined with repletion of the veſſels of the membranes (*Id. Convulſ.* p. 174. 175. Bonet, obſ. 11. 12. 22. *addit.* obſ. 1.); likewiſe alone (Foreſt, *De Senſ. Intern.*); from hydrocephalus (Severin. *Chir. Effic.* P. 2. p. 125. Conring, *Herm. Med.* p. 12. Bartholin. hiſt. 80. cent. iii. Corvin. *Hern. Cereb.* p. 12.); from mere blood, but forced into the brain in too great quantity (Kloekhof, *De Frig. Nerv. Inim. Mem. Preſ.* T. iii. p. 452.); from grumous blood collected in the fourth ventricle (Turner, *Caſe of Surgery*, p. 42.); from pus in the brain (Willis, l. c. p. 52.) and its ventricles; from ſanies and mucus in the ventricles (Bonet, l. c. obſ. 13. 33.); from part of the brain being conſumed (Arcæus, p. 50. Tulpius, l. iv. c. 1. Bonet, obſ. 19. 21. Manochal, *Mem. de l'Acad. de Chir.* T. i. P. 2. p. 154. 155.), or having become ſcirrhous (Fanton. obſ. 20.).

253. To theſe cauſes may be referred, an arthritic, rheumatic, ſcorbutic, venereal, atrabilarious, exanthematic, ulcerous, or any other ſimilar matter and acrimony; moſt of the medicines prepared from poiſons, as the preparations of hydrargyrus or antimony; the perſpiration, ſweat, the matter of itch, cruſta lactea, tinea, herpes, impetigo, ulcers, iſſues, and other uſual excretions ſtriking in, being retained, or drying up; the ſeminal fluids

accumulating, and becoming acrid or corrupted; pus, ſanies, urine, and ſimilar fluids, applied to the nerves, muſcles, ſpinal marrow, or to the brain itſelf, in whatever manner that happens, whether by the veſſels, or by the cellular membrane, or otherwiſe.

254. To theſe (252. 253.) are likewiſe to be added, long watching; affections of whatever kind, inducing ſevere pain; malignant, exanthematic, putrid fevers; wounds; punctures of the nerves; the partial cutting of the ſenſible fibres, while thoſe which remain intire are diſtracted and incapable of ſupporting the force and weight of the others without pain; exoſtoſes; caries; fractures of the bones; ſplinters of the ſame; hurtful bodies introduced into the ſyſtem; ſudden and ſevere changes of the weather; expoſure to a ſharp froſt; a ſultry atmoſphere, charged with foul, noxious vapours; intoxication; the eating of hurtful food, as that of ſome kinds of muſhrooms; plethora of every kind, inanition, and a great loſs of fluids; bad-conditioned fluids; a hurtful colluvies in the *primæ viæ*, particularly in young people and infants; bound belly; the retention of the meconium; the milk having become vitiated or acid by the nurſe's food, or violent emotions of mind, or rendered acid in the ſtomach and inteſtines; worms; dentition; the variolous, morbillous, and miliary miaſma, that of ſcarlatina, or any other malig-

nant one. Not a few are of opinion, that the riſus ſardonicus, and other convulſions of the face, ariſe principally from inflammation, or other injuries of the diaphragm. But it appears from the obſervations of Rahn *, that ſuch ſpaſms may be excited by morbid conditions of any other viſcus which receives nerves from the intercoſtal pair *.

* *Comment. Lipſ.* vol. xviii. p. 554.

255. Hitherto I have been treating of the cauſes in common to all kinds of ſpaſms and convulſions. I ſhall now enumerate thoſe which more properly belong to tetanus, and its different varieties and degrees. Among theſe, as occurring moſt frequently, are enumerated, very keen froſt; cold drink, taken by a perſon when warm; the ſudden tranſition from a hot to a cold ſituation; ſleeping in the open air, ſtretched on the ground, eſpecially in a damp ſituation, after intoxication; acute fevers; wounds of the head; contortions and contuſions of the neck; the puncturing or lacerating any nervous, tendinous, or muſcular part; luxations and fractures of the bones; amputation of the limbs; the exceſſive uſe of wine after being wounded; ichor, ſanies, or pus being retained after the drying up of wounds, or a cicatrix being too ſoon formed on them; abortion; an acrid ſerous colluvies; dyſpepſy; a number of large round worms, contained in the ſtomach and duodenum; wounds of the diaphragm, and the like cauſes *.

* All the ſpecies of tetanus are of common occurrence in the hot climates. The manifeſt cauſes in infants are generally reckoned to be, retention of the meconium, a gaſtric colluvies, and worms; in adults, the incautious cooling of one's ſelf after having been thrown into a heat, but moſt frequently a ſmall wound or puncture, in conſequence of which a ſpaſm is induced on the eleventh or fourteenth day after, the wound in the mean time in general having healed up. Hillary's *Obſervations on the Changes of the Air*, Lond. 1759.

256. Anatomy has diſcovered, that when the diſeaſe is primary and idiopathic, its principal ſeat is the brain and ſpinal marrow, but more frequently and certainly the latter. This was firſt diſcovered by Fernelius, and afterwards confirmed by ſeveral others. Lieutaud does not heſitate to ſuppoſe, that in ſpaſms and convulſions, in which the ſenſes and uſe of the tongue are retained, the ſpinal marrow is affected; and he affirms, that a watery fluid is generally found effuſed between its teguments *. Bilfinger holds the ſame opinion; nay, he ſuppoſes that the upper part of the ſpinal marrow is particularly affected; and whenever a morbid ſtate of the brain has been diſcovered, he contends that it is propagated from thence into the ſpinal marrow †. In a man who, among other ſymptoms, during the laſt days of his life had been tormented with tonic convulſions of the ſuperior extremities, which recurred at intervals, when the crown of the ſkull and the dura mater lying below were removed, ſome drops of effuſed blood above the pia mater,

under the crown of the head, near the left ſide of the longitudinal ſinus, were diſcovered. The veſſels diſperſed over this membrane, inveſting the right hemiſphere of the brain, were remarkably turgid and black. A quantity of water, almoſt limpid, was found ſtagnating in the convolutions of the whole brain. In the ventricles there was ſcarcely any, but a great quantity was found at the *foramen magnum*, from which it was evident that it could not paſs down by that way into the tube of the ſpine, as in fact it immediately flowed out of it when the ſpine was diſſected at the lower part of the thorax ‡. In the hoſpital of Bologna, an. 1752, a patient died of tetanus, with which he was attacked in perfect health. He had been of an excellent habit of body, but had fallen into the complaint in conſequence of expoſure to intenſe cold, in a ſtate of intoxication. On diſſection there was found, between the dura mater and pia mater, with which the medulla ſpinalis is ſurrounded, a great quantity of viſcid, yellow ſerum ‖. Zulatti § has given a very ſimilar account of a caſe of tetanus, which attacked a baker, from nearly the ſame cauſe. In the ventricles, and almoſt intire ſpinal marrow, was found, a viſcid, yellow, and ſomewhat acrid ſerum. On diſſecting the body of a man who had died of opiſthotonos, whoſe caſe has been recorded by Bontius ¶, the ventricles of the brain appeared filled with a viſcid, glutinous, darkiſh-

coloured matter, very like the yolk of an egg, and not a little fetid. Valſalva alſo found a very ſmall quantity of ſerum, which however was of a *ſalt* taſte, in the left ventricle of the brain of a young man who had died of tetanus**. In others the veſſels of the pia matter have been found turgid, and a fluid like jelly contained under it ††. Likewiſe the veſſels of the pia mater above each poſterior lobe, particularly the left one, were found ſo turgid with blood, in another body which was opened, that they appeared of a purple colour. Under the pia mater there was a collection of ſluggiſh, whitiſh fluid, effuſed to a great extent about both lobes. In the occiput, at the baſe of the cerebellum, was found a ſpoonful of reddiſh ſerum, as De Haën tells us ‡‡. But in theſe laſt hiſtories no mention is made of the ſpinal marrow. Had it been inſpected, ſomething would probably have been diſcovered in ſupport of the hiſtories already quoted. Laſtly, according to Morgagni, in theſe caſes we ought not to attend to the quantity of effuſed or ſtagnant fluid only, but alſo to its acrid and irritating nature.

* *Préc. de Med. Malad. Intern. de la Têt.* Livr. i. p. 215. † *De Tetano lib. ſingular. Thcreot. Pract.* p. 57. *et ſeqq.* Lindav. 1763. ‡ Morgagn. *Epiſt. Anat. Med.* x. n. 13. || Dall' Armi, *Sag. di Med. Prat.* P. ii. p. 92. § *Miſcel. de Var. Litterat.* T. ii. p. 147. ¶ *De Med. Indor.* ** Morgag. *Epiſt. Cit.* n. 2. †† *Ibid.* n. 9. ‡‡ *Rat. Med.* P. x. c. 3. p. 123. *et ſeqq.*

257. Like other convulſive diſeaſes (248.), tetanus is either univerſal or partial. The univerſal ſpecies, again, is either *exquiſite*, or *not exquiſite*. The former, like acute diſeaſes, attacks people ſuddenly and quickly, and ſoon finiſhes its courſe; the latter ſlowly, and by degrees. The firſt, therefore, is ſudden, rapid, and very acute; the latter ſucceſſive, habitual, and recurrent *. Both of them, whether univerſal or partial, exquiſite or not, differ on account of the ſeat of their cauſes and origin. For it is ſometimes *idiopathic*, ſometimes *ſympathic*; ſometimes *protopathic*, or primary, ſometimes *deuteropathic*, or ſecondary, or *ſymptomatic*. Likewiſe the cauſes themſelves conſtitute ſome varieties, which by ſome are conſidered as ſpecies, but which it will be better to omit, to avoid increaſing their number unneceſſarily †. It generally comes on, and continues without any fever; ſometimes a fever ſupervenes, and often reſolves it. Sometimes the fever precedes it; in conſequence of which it cannot be conſidered as an inſeparable ſymptom of the complaint. A more uniform ſymptom is, that in the parts affected with ſpaſm a moſt excruciating pain, which comes by fits, as it were, is felt.

* Chriſt. Ludov. Bilfinger, l. c.

† In the *Rat. Med.* T. x. p. 115. of De Haën, there is a *Diſſertation on Tetanus*. There, § vii. p. 182. ſome hiſtories of tetanus are given; but they do not all ſeem to belong to teta-

nus. In the firſt of them, an account of locked-jaw proceeding from angina, is related. I doubt much whether the complaint was a caſe of true tetanus and convulſions. I doubt alſo whether the locked-jaw deſcribed in the *fourth hiſtory*, p. 189. proceeded from convulſions, or was rather an anchyloſis occaſioned by lues venerea, which was certainly preſent. In like manner I am doubtful, whether the immoveable jaw mentioned in the *fifth hiſtory*, p. 190. ought to be aſcribed to ſpaſm, as it may have been occaſioned by the ſwelling and caries of the *antrum Highmorianum*, by which the temporal muſcles and maſſeters might have been ſtretched and extended. That affection certainly was not tetanus, but a rheumatic and arthritic complaint, which is deſcribed in the *ſixth hiſtory*, p. 192. For if, whenever a part is attacked with the rheumatic humour, attended with pain, ſtiffneſs, and immobility, we were to declare that it laboured under tetanus, tetanus, ſo far from being a rare complaint, would be one of daily occurrence *(a)*.

(a) It cannot be denied, however, that ſometimes tetanus, both in its phenomena, and in its termination and method of cure, bears ſuch a reſemblance to acute rheumatiſm, that it may be denominated *rheumatic*. This was lately ſhewn by Jo. Bapt. Marzar, an eminent phyſician, who has acquired a diſtinguiſhed name by his medical writings, in a particular hiſtory, which is to be found in the New Medical Journal of Venice, vol. ii. N. v. p. 176. and well deſerves being conſulted, as containing ſome conſequences not leſs new than neceſſary to be known in practice. He acknowledges, however, that tetanus generally belongs to the nervous affections, as is evidently collected from his epiſtle ſent to me on the 12th of May 1785.

258. When tetanus comes on ſlowly, and as it were inſidiouſly, it cannot be eaſily foreſeen, unleſs a wound, or other cauſes from which it uſually ariſes, precede its appearance. Generally, however, the approach of the diſeaſe is indicated by a dull pain in the head; dimneſs of the ſight;

fainting-fits; ſyncope; an uneaſy ſenſation at the pit of the ſtomach, or under the enſiform cartilage, which is conſidered by ſome as a pathognomonic ſymptom; tremors; and alternate ſubſultus of the breaſt and abdomen. But it is a more certain ſymptom when ſome part becomes ſtiff, as the neck, jaw, &c. But when the diſeaſe at length commences, the whole body becomes ſo rigid, that it cannot by any means be bent, as I have already ſaid (243.), the jaws become firmly locked, and the fauces are not only ſtraitened, ſo as to cauſe a regurgitation by the noſtrils of whatever is taken in, but likewiſe ſeem to become tenſe and hardened. The ſenſes generally remain; but when the diſeaſe is uncommonly ſevere they are ſometimes overpowered. The body is cold, ſometimes it is bedewed with a cold ſweat; the pulſe is found to be ſmall, ſlow, weak, and depreſſed; it is ſometimes accelerated, as in fever; the reſpiration, particularly when the diſeaſe threatens a fatal termination, is anxious and difficult; the eyes remaining fixed in the head; the face is generally pale, but ſometimes red, according to Hippocrates and Aretæus, and the urine is alſo ſuppreſſed, or at leaſt flows more ſparingly. But as ſoon as the patients begin to toſs themſelves about; to complain of ſtupor, and the ſenſation called *formicatio*, in the limbs; and to be ſenſible of itching, and lancinating pains in different parts; it is a proof that the diſeaſe is about being reſolved.

When the diſeaſe is at length reſolved, dryneſs of the fauces, heat, moiſture, and a particular ſenſe of diſorder in the abdomen *, ſucceed.

* Bilfing. l. c. p. 47.

259. Nor can this diſeaſe be confounded with catalepſy, paralyſis, ſevere rheumatiſm, the congelation of the body by cold, anchyloſis, and ſimilar affections. For every body knows, that in catalepſy and paralyſis the body may be eaſily bent as we pleaſe, and that it is by no means rigid, as in tetanus; which diſtinction will appear ſtill more clear, if the deſcription of both diſeaſes (258.) be compared with the notes (243. 258.). In the ſevere rheumatiſm, again, the power of moving is not wanting, but the ſwelling of the parts, and the inflammation and very ſevere pain of the muſcles or ligaments, prevent the patient from enjoying his uſual freedom of motion. In anchyloſis alſo, it is manifeſt that the motion is defective, not in conſequence of the rigidity and ſpaſm of the muſcles involuntarily contracted, but from an actual morbid ſtate of the joints. But every perſon muſt be able to diſtinguiſh between the body's being frozen with cold, and affected with tetanus. The extreme coldneſs of the body, the defective reſpiration and pulſation, and the deep ſleep and numbneſs, together with the circumſtance that the limbs, when bent with violence, do not recover their former ſituation, and the preceding cauſes, ſufficiently demon-

ſtrate that the body is in a ſtate of congelation. We muſt take care alſo not to confound with tetanus, or locked-jaw, the *triſmus rheumaticus* occaſioned by an accumulation of the rheumatic matter about the muſcles and articulation of the lower jaw, or with the locked-jaw proceeding from a ſwelling of the parotids, or from the inflammation of ſynanche, or with the *triſmus ulceroſus*, or *anchyloticus*, occaſioned by ulcers of the mouth and fauces, by cicatrices and abſceſſes, or by the growing together of the cheeks or jaws at the angles of the mouth, or by anchyloſis, or any other manifeſt cauſe. For in each of theſe affections the examination of the mouth, and ſoftneſs of the muſcles moving the jaws, make the diagnoſis evident *.

* I ſhould recommend the peruſal of a very complete treatiſe on tetanus, executed with incredible labour, entitled, *Wenceſlai Trnka de* Krzowitz, S. R. I. *Equit. in Regia Univerſitate Tyrnavienſi Anatomes Profeſſoris Pub. et Ordinarii Commentarius de Tetano plus quam ducentis clariſſimorum medicorum obſervationibus, necnon omnibus hactenus cognitis adverſus Tetanum remediis inſtructus.* Vindob. 1777. in 8vo, p. 465. For in it will be found collected all that has been written on the ſubject, both by the ancients and moderns.

260. As the remaining diagnoſtic marks, both of the *tonic* and *clonic* affections, appear from the preceding chapters, there is no occaſion for repeating them here. I ſhall only add, that ſuch perſons as are affected with convulſive diſeaſes in

general are ſometimes pale, ſometimes red, ſometimes very warm, at other times cold, and occaſionally bedewed with ſweat; that their urine is ſometimes ſuppreſſed, ſometimes more copious than uſual, voided frequently, and thin; that the belly is at one time obſtinately bound, at other times unuſually looſe. Laſtly, it remains for us to diſtinguiſh the convulſive motions from *tremor*. The latter accompanies every voluntary motion; the former motions, again, generally take place while the patient is unconſcious of them. For trembling, although it may be conſidered as a degree of convulſion, proceeds from weakneſs of the moving power, and the irregular action of the nerves upon the muſcles, the power of voluntary motion ſtill remaining intire. But in actual convulſions voluntary motion is wanting, though not as in paralyſis, in which the paralyſed limb, deſtitute of motion, may be drawn or bent in any direction; in convulſions, again, becauſe it is tenſe or contracted, that cannot be done without violence and excruciating pain.

OF EPILEPSY.

261. As I have already claſſed Epilepſy among the convulſive diſeaſes (242.), and undertaken to deſcribe it more fully, I ſhall accordingly fulfil my promiſe in this place, and give as brief a

view as poſſible of its nature, cauſes, and ſymptoms, as being a diſeaſe of frequent occurrence, and often proving exceedingly troubleſome. Thoſe perſons, therefore, who are attacked with this complaint, ſuddenly fall down, and begin to ſhake all over, intirely deprived of ſenſe; inſomuch that epilepſy, properly ſo called, may be defined to be *the ſudden interruption of all the ſenſes, both internal and external, accompanied with a violent alternate contraction and relaxation of almoſt all the muſcles of voluntary motion, and continuing for a longer or ſhorter period; until the perſon ſo affected returns to his former health and ſtrength, perfectly unconſcious of what has paſſed.* Such is the *genuine* and *perfect epilepſy*, or, as others name it, *morbus ſacer*, *herculeus*, *divinus*, *lunaticus*, *comitialis*, *caducus*, and *puerilis* *. At preſent, however, the name is only given to that affection which returns at intervals, and is really chronic; for when the complaint is recent, tranſient, and does not return again, the name of *eclampſia* is given it in preference; of which kind, in particular, is that into which children fall in conſequence of dentition, or the retention of the *meconium*, or of the variolous or morbillous miaſma, to which, however, on the cauſe being removed, they are no longer liable.

* It was alſo named ἐπιλαψία by Ariſtotle and Hippocrates, ſignifying, as it were, *comprehenſio*, or *correptio*, a ſeizing. For

the ancients believed that epileptic patients were ſeized by ſome devil, and dreadfully ſhaken. They likewiſe named it *morbus ſacer*, from ſuppoſing that it was to be removed by nothing but divine aid; or becauſe it occupied the ſeat of the ſoul; or becauſe it was the cuſtom of the Greeks to denominate every thing great *ſacer*. For in their language *ſacrum* is often put for *magnum*. Hence *ſacra nox*, *ancora ſacra*, occurring in Homer. Beſides, *ſacer* is ſynonymous with *execrable*, as in Virgil, *Auri* ſacra fames *quid non mortalia?* &c. Celſus, however, employs *ſacer* and *major morbus* in the ſame ſenſe. It is likewiſe named *Herculeus*, either becauſe Hercules laboured under it, or becauſe it has generally been found to prove incurable by art. Ariſtotle, too, gave it this name. Plato has named it *divinus*, from the ſuppoſition that the divine part of the mind is affected in it. Moreover, it is named *lunaticus*, for many reaſons; chiefly, however, 1. becauſe perſons born during the change of the moon have frequently been obſerved to be liable to it; 2. becauſe it is ſuppoſed to follow the change of the moon; 3. becauſe it was ſuppoſed to be inflicted by the moon upon wicked men, by way of puniſhment. But, paſſing over the ſuperſtitious notions of the ancients, ſo great always has the perſuaſion of mankind been concerning the influence of the moon upon this diſeaſe, that Riverius *(De Epilepſ.)* has written, that idiopathic epilepſy attacks people during the conjunction of the ſun and moon; nor has Meade *(De Imper. Sol et Lun.)* heſitated, not only to defend the opinion of the ancients, but has alſo adduced obſervations to demonſtrate that it repeats its acceſſions during the increaſe of the moon, and chiefly at its height. Again, it has been named *comitialis*, becauſe, whenever a perſon, in conſequence of being ſtruck with it in the popular aſſemblies, which was very apt to happen in a crowded meeting, the *comitia* were interrupted on account of a religious ſcruple. Laſtly, it has been named *caducus*, from its being attended with falling; and *puerilis*, on account of its occurring chiefly in children.

262. Nearly the ſame ſymptoms which precede apoplexy announce the approach of epilepſy, namely, heavineſs of the head and vertigo; tinnitus aurium; *muſcæ volitantes;* ſlowneſs, or difficulty of ſpeech; profound ſleep, or unuſual watching; alarming dreams; unuſual grief; irraſcibility; forgetfulneſs; torpor; numbneſs; trembling; ſneezing; a copious flow of ſaliva; nauſea: or, on the other hand, hunger, and keen appetite; the perception of a diſagreeable or unuſual ſmell; ſtraitening of the breaſt, throat, and belly; a ſpaſmodic affection of ſome muſcle; pain of the ſcapulæ; palpitation of the heart; oppreſſion; ſtraitneſs; and watery and crude urine. Some, a little before the acceſſion of the diſeaſe, are ſeized with a pain or cramp in ſome part, or the ſenſation of a cold *aura* riſing upwards. By theſe ſymptoms, the approach of the acceſſion is frequently felt; ſometimes, however, it comes on without being preceded by any ſymptom, ſuddenly and ſecretly.

263. But when the paroxyſm at length commences, the patient then on a ſudden falls down, deprived of his ſenſes. He is ſhaken with clonic convulſions; ſometimes he becomes immoveable, and is again convulſed; his face becomes red, or pale, or livid, and ſwelled; he thruſts ou this tongue, which is often ſeverely bitten; and in violent caſes the excrements, urine, and

ſemen are unconſciouſly ejected *. The pulſe, which is generally ſtrong, great, and frequent, comes and goes by turns; the eyes are ſometimes open, and remain fixed, at other times they roll about ſurpriſingly, and continue to do ſo even after the paroxyſm has ceaſed. In ſome people a hiſſing noiſe and ſnoring are excited; in others hiccup or vomiting come on; in moſt inſtances the patients foam at the mouth and noſtrils, particularly towards the end of the acceſſion, and ſweat flows from the head, neck, or even from the whole body. Sometimes ſurpriſing motions and geſticulations of the limbs take place; and in other caſes, at the commencement of the fit, the patient ſhrieks or roars out, or utters ſome incoherent and inarticulate words. Sometimes ſo great is the agitation and convulſion of the limbs, that even thoſe of ſtrong full-grown men are thrown off joint †. I once obſerved the lower jaw of a young woman of rank ſo ſtretched and diſplaced, that at the end of the paroxyſm ſhe could not cloſe her mouth until a ſurgeon had replaced the jaw. I attended another young lady of quality, the head of whoſe left humerus, whenever ſhe was ſeized with epilepſy,—which happened almoſt every month,—ſlipt down into the cavity of the axilla. After this horrid conflict ceaſes, which in ſome caſes happens in a few minutes, in others after a longer time, nay, in ſome, not until after ſeveral hours ‡,

the limbs become relaxed, and their motion ſubſides; the eyes appear dull and heavy; the veins of the forehead, temples, face, and neck, do not immediately fall; the mind remains ſtupid and torpid; the lips are black and livid; the tongue bleeds; the ſenſes and voluntary motions return ſlowly; but the patient retains no remembrance of any thing that is paſt. Thoſe who return to themſelves in this manner only complain of a pain in the head, breaſt, and limbs.

* Duretus ſuppoſed that in epilepſy the muſcles of voluntary motion are contracted, and that thoſe of involuntary motion become reſolved. But Van Swieten denies that the excrements are paſſed in conſequence of the reſolution of the ſphincter, being of opinion that this takes place on account of the very violent action of the diaphragm and abdominal muſcles overcoming the reſiſtance of the ſphincter, and thus forcing out the excrements. They do not in fact paſs out gradually, but are exploded with great violence. *Comment. in* Boerhaav. § 1077.

† Van Swieten, *ib.* § 818.

‡ I ſaw a young clergyman, of a delicate habit of body, who had been attacked with a moſt terrible epilepſy in conſequence of great anxiety of mind. For nearly twenty hours, during which he remained deprived of all his ſenſes, he experienced the moſt dreadful clonic convulſions, which ſucceeded each other without any complete intermiſſion. They were at length allayed by the repeated opening of the jugular veins.

264. Hitherto I have been deſcribing, not only true and perfect epilepſy, but alſo the ſevere and

moſt common kind. For that which takes place with a clonic motion of only ſome parts, or in which all the ſenſes are not overwhelmed, or at leaſt not intirely, I grant, is to be denominated *epilepſy*, but it is of the ſlight and imperfect kind. There are, moreover, certain degrees of approximation to it, in which the ſenſes are ſcarcely at all interrupted, or only for a moment, and ſcarcely any convulſive motion, or only a very ſlight one, takes place, the patients not falling on the ground, but continuing to ſtand. Theſe I ſhould rather name *epileptic attacks*, than actual epilepſy. But if they are neglected, a tranſition, firſt to ſlight epilepſy, and next to that which is ſevere and perfect, in general gradually takes place. I likewiſe obſerve that authors relate ſome very rare caſes, and aſſign them to this ſpecies of diſeaſe, while not a few of them appear to me to be referable to ſomnambuliſm, or exſtacy, or anæſtheſia, or hyſteria, or to the complicated nervous affections. If, therefore, I omit them, let me not be accuſed of negligence; particularly as unuſual and remarkable inſtances of this kind will be found in abundance by any one who is deſirous of ſeaching for them in the works of authors who are curious in collecting ſuch caſes.

265. With regard to the cauſes, they are ſuch as I have already enumerated in general as being in common to the couvulſive diſeaſes (249. *et ſeq.*). According to the different ſeats which the diſeaſe oc-

cupies, a diſtinction of particular conſequence ariſes, namely, that of the *idiopathic*, *ſympathetic*, and *ſymptomatic* epilepſy. In the idiopathic ſpecies the ſeat of the cauſes is the head itſelf. In the bodies of thoſe who have died of this ſpecies, the brain has frequently been found callous, or flaccid, or corrupted, or an effuſion of ſerum has been diſcovered in the ventricles, or little bones have been obſerved growing in the membranes, or exoſtoſes, ſoft tumours, caries, and the like have been noticed in the ſkull. Sometimes, however, as Morgagni informs us, no manifeſt injury has been obſerved. The ſpecies of epilepſy, the cauſe of which is contained in the head, is known by particular marks. It generally attacks the patient without any previous warning, and almoſt always ſucceeds to ſymptoms of derangement of the brain, while the other parts are in a ſound condition: the ſymptoms are, chronic headach, frequent vertigo, and dulneſs of the ſenſes and intellectual faculty, or they are the ſequels of it. Thoſe cauſes alſo precede which immediately affect the brain, particularly terror, a metaſtaſis, an hereditary taint, blows, and wounds. On the other hand, in the ſympathetic ſpecies, while the brain is perfectly ſound, a morbid condition of ſome diſtant part takes place, in conſequence of which the patients are generally appriſed of its approach. Hence various diſtinctions are laid down by au-

thors, according to the different ſeats of the origin of the complaint. Sometimes the ſtomach, ſometimes the inteſtines, or hypochondres; at other times the uterus, or toes, or fingers, or extremities, and other parts, contain the cauſe of the complaint. The knowledge of which cauſes, although it be very neceſſary to the phyſician, does not increaſe the number of the ſpecies. But I have no objection to derive the names from the parts and cauſes, in order to make the diſtinction of the diſeaſe ſtill more clear. Hence it may be named *ſtomachica*, *melancholica*, *atrabilaria*, *verminoſa*, *hyſterica*, and ſo forth.

266. If the diſeaſe proceeds from the ſtomach or hypochondres, there are preſent ſymptoms of indigeſtion, namely, acid, ſtrong ſmelling, rancid eructations, flatus, borborygmi, a bad taſte of the mouth, nauſea, injuries of the functions of the abdominal viſcera, anxiety after taking food, and an aggravation of all the ſymptoms; but when the ſtomach is empty, frequently a gnawing ſenſation in it, cardialgia, and pains are felt. Authors of great reputation mention that it has ſometimes proceeded from the liver, particularly from ſtones in it*. When this is the caſe, it is preceded by hepatalgia, or icteric colic, obſtinate icterus, apt to return, and the other ſymptoms of ſtones in the gall-bladder, of which we ſhall hereafter make mention. If it proceeds from the uterus, hyſteria, fluor albus,

hyſteralgia, ſwelling and obſtruction of the ovaria, diminiſhed or vitiated excretions, hemorrhages, and the like, occur. If it proceeds from worms, among other ſymptoms, itching of the noſe, paleneſs of the face, ſneezing, fluſhing of the face, mydriaſis, alarms during ſleep, fainting without any manifeſt cauſe, aſh-coloured, argillaceous, or mucous ſtools, gripes, colic-pains, a tympanitic ſwelling of the belly, and principally the voiding of lumbrici, tæniæ, gourd-worms, or aſcarides, are obſerved. In the ſpecies of the complaint proceeding from acid or coagulated milk in the ſtomach or inteſtines of infants, green ſtools, or ſuch as ſhortly become ſo, emitting an acid ſmell, vomiting, and diarrhœa occur. When it proceeds from the meconium being paſſed with difficulty, or retained, flatulency, crying, ſwelling of the belly, and coſtiveneſs take place. When it proceeds from difficult dentition, the time and age when it occurs, the heat, ſwelling, and pain of the gums, the ptyaliſm, reſtleſſneſs, heavineſs of the head, redneſs of the cheeks, thirſt, and occaſional fever, indicate it. When it proceeds from any particular part, as from the fingers, feet, legs, or hands, the ſenſe of pain, ſpaſm, and contraction in it, or the aſcent of the cold *aura*, or any other preceding perception of uneaſineſs from which the diſeaſe may ſeem to originate, denote its preſence. But the diſtinctions of the ſymptomatic epilepſies are

taken from the diſeaſes of which epilepſy is a ſymptom. The principal ones are, the *febrilis*, *exanthematica*, *ſyphilitica*, *traumatica*, *cachectica*, *melancholica*, and ſo forth; according as they proceed from fever, exanthematous diſeaſes, lues venerea, wounds, cachexy, melancholy, and other diſeaſes. Laſtly, the diagnoſis of the remaining cauſes (251. to 255.) will appear from the attentive conſideration of the ſymptoms preceding, accompanying, and ſucceeding the complaint. Nor muſt theſe obſervations be underſtood as applying only to epilepſy and its origin, but likewiſe to every ſpaſmodic or convulſive affection already mentioned.

* Baumè adduces an inſtance from the *Journ. de Med.* T. lvii. p. 320. by which he endeavours to prove that a woman died of epilepſy proceeding from this cauſe. But although ſhe was labouring under icterus, and probably had calculi in the gall-bladder, it does not, however, appear ſufficiently that it was a caſe of ſympathetic epilepſy, as the idiopathic cauſes were not wanting. Another inſtance of the ſame kind of epilepſy is mentioned in this Journal (for July, p. 504.), where it is ſaid, that a pain in the right ſide of the epigaſtrium, and all over the arm and knee of the ſame ſide, was preſent. Hoffman makes a remark ſimilar to this (*De Epilepſ.* obſ. 3.). Fabrici (*Act. Phyſ.* T. x. obſ. 36.), in the body of a perſon who had died of epilepſy, from the ſame cauſe, found the gall-bladder full of inflammable calculi, and the vena porta turgid with black blood, but no ſerous fluid was effuſed in the brain; the ſubſtance of the brain itſelf was dry and compact, and the veſſels completely deſtitute of blood.

THE PROGNOSIS.

267. In the ſame manner as in every other diſeaſe, in the convulſive affections, the prognoſis is chiefly to be collected from a knowledge of the cauſe and duration of the complaint. I ſhall collect their prognoſtic ſymptoms together, to avoid proving tedious, by repeating under their ſeveral heads thoſe ſymptoms which are in common to many of them. In general theſe diſeaſes ought never to be conſidered as free of danger. The idiopathic ſpecies are conſidered as being more ſevere and difficult of cure than the ſympathetic. The ſympathetic ſpecies, again, if they continue long, or frequently recur, gradually paſs into idiopathic ones. The more violent and continued the ſpaſm is, and the greater the number and importance of the parts affected are, and the more the vital functions are affected, the greater reaſon for apprehenſion is there.

268. The convulſions which happen in acute, exanthematic, and inflammatory fevers, during their increaſe, or at their height, eſpecially when they occur after watching, delirium, or deep ſleep, are extremely dangerous. For they are occaſioned by the morbific matter, ſtill undigeſted and not ſufficiently prepared for excretion, being forced into the brain and nerves. The author of the *Coacæ*

Prænotiones * obſerves: "When convulſions ſucceed to fever, they announce danger; but this is not the caſe in children." And again †, "Convulſions, together with the pains of the hands and feet, occurring in fever, afford an unfavourable prognoſtic mark." Which Hippocrates alſo hints, when he obſerves ‡: "Convulſions and violent pains in the viſcera, occurring in acute fevers, are bad." Sometimes, however, on concoction taking place, and the matter becoming fit for being evacuated, if convulſions occur, they promote its excretion, and reſolve the diſeaſe. But in that caſe the convulſions, as is noticed in the *Coacæ Prænotiones* ‖, are of ſhort continuance, ceaſing upon the ſame day. Thoſe convulſions are generally of the ſame kind which precede the eruption of ſmall-pox or meaſles; likewiſe great danger is threatened by convulſions ſucceeding to great loſs of blood, or the iliac paſſion, watching, or exceſſive purging. The ſtudent may conſult aphoriſm 2. 3. and 45. of ſection v. and aphoriſm 9. 10. 18. 25. of ſection vii. of Hippocrates: as alſo in the *Coacæ Prænotiones*, number 565. where convulſions proceeding from pure vomiting are pronounced to be dangerous. We muſt not, however, loſe all hope in the convulſions which proceed from employing a draſtic cathartic, although Hippocrates has pronounced them to be fatal: for paregorics, opiates, and theriacal remedies ſometimes allay them. Laſtly,

thoſe convulſions which come on in conſequence of a wound, ulcer, or abſceſs, about the brain or principal nerves, denote certain death.

* N. 356. 357. † N. 3. ‡ Aph. 66. ſect. iv. ‖ N. 15.

269. Hippocrates has obſerved: "Thoſe who are ſeized with tetanus, are carried off generally within four days. But if they ſurvive this period, they recover *." The ſame author, however, as Van Swieten remarks, has elſewhere pronounced the duration of the diſeaſe to be greater. In fact, inſtances are recorded of tetanus having been protracted for twenty or thirty days without having been cured. That one which Valliſner cured, was extended to the length of a year. But ſeveral inſtances of tetanus are mentioned which were more prorheumatic and arthritic, than tetanic affections. "Convulſions or tetanus, accompanied with violent heat, are bad †. Convulſions or tetanus are reſolved in conſequence of fever ſupervening ‡. An opiſthotonos, if a fever ſupervenes, is reſolved by the voiding of urine like ſemen ‖. If the jaws become relaxed in tetanus, it is a fatal ſymptom §." The truth of this prognoſis has been frequently proved by experience. In ſupport of this, the reader may conſult the hiſtories of tetanus, which have been given by De Haën ¶, in which this ſymptom, when it appeared, uniformly proved fatal: "It is a more favourable ſymptom when fever

ſupervenes in convulſions, than when convulſions ſupervene in fever **. Perſons labouring under quartan fever, are not very liable to convulſions; but when a quartan ſupervenes in convulſions, the patients are reſtored to health ††. Convulſions are reſolved by the catamenia, if they appear about the beginning of the complaint, and at the ſame time fever does not come on ‡‡." Sand being mixed with urine, and adhering to the ſides of the pot |||, not only in convulſions, but in almoſt all diſeaſes, by general conſent affords a favourable prognoſtic. I knew a married woman, who was very liable to convulſive affections, and always received great relief from the paſſing of ſomewhat turbid and paliſh urine.

* Aph. 6. ſect. iv. † Hippocrat. aph. 13. ſect. vii. ‡ *Id.* aph. 57. ſect. iv. || *Coac.* N. 362. § *Ib.* N. 361. ¶ L. c. ** Hippocrat. aph. 26. ſect. ii. †† *Id.* aph. 70. ſect. v. ‡‡ *Coac.* N. 531.

||| I cannot here omit a paſſage of Morgagni relating to this kind of ſand in the urine, which deſerves being tranſcribed intirely. For, after mentioning the obſervation of Joubert and Grad, concerning the gravel paſſed by patients towards the end of a fever, or after long continued fevers, and pointing out in what manner it is to be diſtinguiſhed from that which is paſſed by gravelly patients,—for, on being rubbed between the fingers, it eaſily crumbles, which does not happen with regard to the gravel paſſed in calculus,—he adds; "Moreover, not only in fevers, whether vernal, ſummer, autumnal, or winter ones, whether intermitting, continued, or benign, or accompanied with petechiæ, or of an intermediate kind,

or very ſlight, of long or ſhort continuance, whether occurring in children, young people, or in men, or in women, and that too occaſionally during pregnancy, or ſuch as have ariſen from the more frequent cauſes, or ſometimes from particular ones, as the ſwallowing of a corroſive poiſon, but alſo in ſeveral other diſeaſes unaccompanied with fever, and particularly in ſevere headachs, and apoplectic affections, ſometimes alſo in thoſe occurring in old age, I have obſerved, that whenever this gravel was paſſed, very frequently the fever or diſeaſe had either terminated, or was faſt approaching to its termination; though I have not unfrequently obſerved it when the diſeaſe either had not begun to take a turn, or, if it had, when it proceeded but obſcurely, ſo as ſtill to leave the event doubtful. But as at the termination of the diſeaſe, or when the turn to a certainty has taken place, and daily becomes more manifeſt, the paſſing of this gravel decides the victory of nature; ſo before the beginning of the turn, or when it is ſtill doubtful, it generally portends a ſucceſsful termination: for the diſeaſe either intirely ceaſes, or, if it returns, it proves much ſlighter and of ſhorter continuance. Once only, as I have elſewhere obſerved, a dropſy, which had ariſen after a fever, on being diſcuſſed, was ſucceeded by other ſevere diſeaſes, of conſiderable duration, from which, however, the patient recovered. I have known of merely one inſtance of a patient's death proceeding from a malignant autumnal fever, which I never had an opportunity of obſerving either before or after that day; ſo that I am at a loſs to know whether the fever, or any error afterwards committed by the patient, or aſſiſtants, or phyſician, occaſioned his death; nor can I ſay whether the gravel was preſent during the whole courſe of the diſeaſe, or appeared for the firſt time on that day. Nor do I ſpeak of the gravel which always appears, but only of that which begins to ſhew itſelf at the height of the diſeaſe, which is now drawing to a turn, or after the latter has actually begun, adhering, as Grad obſerves, to the ſurface of the *pot*; not of the *urine*, as is ſaid in the *Sepulchretum*, where not even the book in which the

obſervation has been made is pointed out. If the urine is inſpected in a clear light, very fine ſand will be obſerved adhering to the ſides of the glaſs-veſſel in which it is contained, ſometimes alſo floating on the ſurface of the urine, generally browniſh, very ſeldom whitiſh, ſuch as I remember to have obſerved in a young man, labouring under a malignant fever accompanied with petechiæ, when the fever had taken a turn." *De Sed.e t Cauſ. Morb.* Epiſt. 49. art. 21.

270. Hereditary epilepſy, or that which ariſes in the fœtus, in conſequence of the mother's being alarmed during pregnancy, or which proceeds from a mal-conformation, and other cauſes which cannot be removed, is ſcarcely ever cured. The complaint is generally of long continuance, and the more violent and frequent its paroxyſms are, the more dangerous is it; for it is apt to paſs into a fatal apoplexy. Sometimes a ſingle violent paroxyſm cuts off the patient. This generally happens, when, after ſeveral acceſſions have been overcome, an uncommonly ſevere one comes on, which at length proves fatal. If, therefore, the perſon ſeized with a fit does not return to himſelf after ſome hours, and ſtill more if the convulſions are repeated after intervals, and ſenſation is intirely ſuſpended, certain death may be expected. That which is recent, and in which the paroxyſms, although frequent, are of ſhorter continuance, is more eaſily cured, than one of longer ſtanding. Hippocrates, therefore, has juſtly obſerved, "When the complaint has got to a head, it becomes in-

curable *. Likewiſe that ſpecies of epilepſy which ariſes from water between the ſkin, occaſions death, as we learn from the *Coacæ Prænotiones* †. That alſo which attacks newly-born children in general proves fatal. It is very difficultly removed in old people. A violent attack of epilepſy during pregnancy frequently occaſions abortion. That which ſucceeds to phrenitis, or mania, or melancholia, is generally incurable, becauſe polypous vitiations, or other concretions in the brain, have been obſerved to occaſion it, as appears from diſſection ‡. Hippocrates has left us many prognoſtics concerning epilepſy. He obſerves: "Epilepſy, when it happens before puberty, admits of cure, but after the twenty-fifth year of one's age, it generally ſticks by a perſon during life ‖." He has ſaid *generally*, becauſe even of theſe patients ſome are cured. He makes ſimilar obſervations elſewhere, when he obſerves: "Thoſe perſons in whom epilepſy happens before the age of puberty, undergo a change in the courſe of their life ‖." He confirms this opinion in another paſſage, where he adds: "Epileptic children are freed from the complaint, principally by advancing in life, and by a change of climate and manner of living ¶." That happens chiefly about the period of puberty, when the body becomes ſtronger, unleſs the complaint proceeds from ſharp points

ſticking out from the inner ſurface of the ſkull, or caries of the bones of the head, or effuſed humours, or ſcirrhous tumours of the brain, and other incurable complaints, but particularly if the diſeaſe depends upon a ſtrumous ſtate of the brain **. But Hippocrates has nowhere explained himſelf more clearly and diſtinctly than in the ſecond book of his prognoſtics ††, of which theſe are the words: "Moreover, of ſuch as are ſeized with epilepſy, thoſe perſons are moſt difficultly cured, in whom the diſeaſe has continued from infancy to manhood; next thoſe in whom it occurs at their prime, continuing from the twenty-fifth to the forty-fifth year of their age. And next in order come thoſe perſons in whom the diſeaſe takes place, without giving any indication from what part of the body it originates. That ſpecies of epilepſy which ſeems to originate from the head or ſide, hand or foot, is more eaſily cured. But even theſe ſpecies of the diſeaſe differ from one another in this reſpect. For thoſe which ariſe from the head, are moſt ſevere; next come ſuch as proceed from the ſide. Thoſe proceeding from the hands and feet moſt readily admit of a cure." Hence the prognoſis varies, according to the duration of the diſeaſe, and the variety of the patient's age, and it moreover appears, that the moſt difficultly curable of all the ſpecies of epilepſy is that which attacks the patient without

any preceding ſymptom, as alſo the idiopathic ſpecies; while that one is leſs difficultly cured which is occaſioned by ſympathy. For this laſt frequently yields to the employment of a proper method of cure. It appears alſo from experience that the ſymptomatic ſpecies, if the primary diſeaſe admits of a cure, may be removed. The complaint frequently terminates in conſequence of paralyſis, abſceſs, ſcabies, or quartan fever ſupervening. That ſpecies of epilepſy which diſappears in the prime of life, according to Aretæus, ſometimes occaſions deformity, either depriving the patient of the uſe of his hand, or producing diſtortion of the face, or extinguiſhing ſome of the ſenſes. But we muſt not be too ready to ſuppoſe that the diſeaſe has been overcome in conſequence of the paroxyſms not returning at the uſual period; for the nature of the complaint is very fallacious and anomalous. We have reaſon to expect that the diſeaſe will not return any more, only when the patient is at length no longer ſubject to the attacks of the complaint, ſleeps well, has a good appetite, is alert in body and mind, acquires a good habit of body, and is regular in his belly. On the other hand, there is reaſon to dread a fatal termination if the diſeaſe does not ceaſe to recur, leaving a very ſhort interval between the attacks, and being attended with paroxyſms of great du-

ration, ſucceeded by deep and long continued ſleep, from which the patient cannot be rouſed ‡‡.

* *De Morbo Sacro*, xiii. 15. † N. 459. ‡ Felici, *Diſſ. del Præſag. Med.* p. 155. ‖ Aph. 15. ſect. vii. § Aph. 7. ſect. v. ¶ Aph. 45. ſect. ii. ** Ruſſel, *Oeconom. Nat. in Morb. Acut. et Chron. Glandul.* Lond. 1755, p. 96.; and *Comm. Lipſ.* vol. v. p. 472. †† N. 16. ‡‡ Andr. Piquer, *Prax. Med.* P. i. l. i. c. ix. p. 113.

THE CURE.

271. In the treatment of every diſeaſe, and conſequently of every ſpecies of convulſion and ſpaſm, it is neceſſary to look to the cauſes (249. *et ſeq.*). Hence when plethora is preſent, it ought immediately to be removed by bleeding. In the caſe of a ſerous colluvies we muſt have recourſe to hydragogues, diuretics, diaphoretics, ſialagogues, bliſters, epiſpaſtics, and other kinds of evacuations. Gorter and Van Swieten particularly recommend diuretics, eſpecially when the diſeaſe has been occaſioned by the retention and abſorption of the urine. Among theſe there are ſome which poſſeſs likewiſe an antiſpaſmodic property, as white amber, its volatile ſalt, the ſuccinated liquor of hartſhorn, millipedes, earth worms, cochineal, *ſp. nit. dulcis*, the ferulaceous gums. And theſe may be alſo employed, when ſluggiſh and thick humours, attended with laxity and a-

tony of the ſolids, occaſion or keep up the diſeaſe. Inanition from hemorrhages, or exceſſive purging, or other evacuations puſhed too far, requires analeptic, reſtorative, nouriſhing, cordial, and paregoric remedies. If exceſſive ſenſibility, or irritability, or ſevere pains, or exceſſive watching, have occaſioned the complaint, anodyne remedies of every kind, and particularly opium, prove ſerviceable. Theſe remedies are proper alſo when the complaint has ariſen from fear, anger, or a deranged ſtate of the nerves. Sometimes relief is obtained from bleeding, the *liq. anod. min.* of Hoffman, vitriolic æther, the antepileptic ſpirit of Pezoldt, muſk, camphor, caſtor, aſſafœtida, the emulſions of the cold ſeeds, and of white poppy, the *ſyrupus de meconio* of Sydenham, oily, mucilaginous things, the hot bath, emollient injections, and the like. The foſſil acids are ſaid to diminiſh ſenſibility and irritability, and therefore are conſidered as proper here, particularly when ſweetened and corrected with ſpirits of wine.

272. Poiſons taken into the ſyſtem, and among theſe, the poiſonous plants, as cicuta, belladonna, water hemlock, coriaria, and deleterious muſhrooms, are ſheathed by the employment of oil, butter, milk, hydromel, and oxycratum, by which means their action is blunted and corrected, and they are at length expelled by emetics, cathartics,

and clyſters. Such is the power of oily remedies in allaying ſpaſms and convulſions, that Albertini, an eminent practitioner in Bologna *, has removed thoſe that were occaſioned by the ſwallowing of poiſons, by employing a bath of tepid oil. But even thoſe which ariſe from an internal cauſe are often wonderfully relieved by the internal employment of oil. Morgagni mentions that Valliſner cured a nobleman who had been ſubject to convulſions for a year, by giving for a long time two ounces of oil every evening, in place of ſupper †. Worms, a colluvies in the *primæ viæ*, and the meconium, are expelled by means of anthelminthics and oily remedies, cathartics, and ſaponaceous things, condenſated cow's-gall, honey, and injections. Acid crudity, and coagulated milk, are removed by antacids, abſorbents, Venice ſoap, bitters, rhubarb, and its ſyrup. The irritation occaſioned by injuries of the cranium and head is removed by the perforation of the ſkull and other operations, which is ſerviceable alſo in the ſpecies of the diſeaſe ſituate elſewhere, if the complaint proceeds from conſent with theſe parts. For when a nerve is punctured, half cut, or in any other way lacerated, it ought to be divided; the narrow wound ought to be enlarged; the fragments of the bones ought to be removed, and the communication and conſent with the part ought to be interrupted by li-

gatures, and the pain alleviated by proper remedies.

* Morgagn. *De Sed. et Cauſ.* ep. x. n. 21. † *Ibid.*

273. The convulſions which generally occur in the eighth, ninth, and tenth month of infancy, accompanied with ſwelling, pain, and redneſs of the gums, fever, ſpitting, diarrhœa, according to Sydenham*, are allayed by nothing more quickly and efficaciouſly than by bleeding. With the ſame view he propoſes a few drops of the ſpirit of hartſhorn, diluted in ſome cephalic water, and ſweetened with a proper ſyrup. Scardoni prefers the ſuccinated liquor of hartſhorn, affirming to have frequently obtained ſurpriſing advantage from its employmen †. I myſelf have occaſionally employed both remedies with advantage. In the mean time the gums ought to be relaxed as much as poſſible by means of gentle friction, an anodyne liniment, ſyrup of althæa, mucilage of the ſeeds of flea-wort, and, laſtly, if the tenſion and pain be great, they may be lanced, in order to promote the cutting of the tooth. For allaying the pain and ſpaſm, a ſmall ſpoonful of the ſyrup of diacodium, given at intervals, is found to be ſerviceable.

* *Oper.* ſect. iv. c. v. † *De Cogn. et Cur. Morb.* l. i. p. 167.

274. When the convulſions precede the eruption of ſmall-pox, meaſles, or the ſcarlet-fever, if they do not quickly ceaſe, they muſt be treated

by immediately applying an epiſpaſtic to the back of the neck, and giving internally a ſpoonful of the epidemic water, with five drops of laudanum, as Sydenham * and Meade † adviſe. And if at the ſame time plethora be preſent, it does not appear to be improper to let blood, and to employ the tepid bath and fomentations. Some practitioners recommend, as a good remedy for the convulſions with which ſucking children are affected, a mixture conſiſting of an ounce of the water of black-cherries, five drops of the ſpirit of hartſhorn, ten grains of the *requies Nicolai*, and two drachms of ſyrup of violets taken occaſionally by ſpoonfuls. Nor do infants and children only, but alſo women during parturition, when labouring under convulſions, claim our attention. For theſe laſt, during the violent pains and throws of parturition, in conſequence of a congeſtion of blood in the brain taking place, are occaſionally attacked with the moſt dreadful convulſions. In that caſe, volatile remedies, ſpirits, and heating antiſpaſmodic remedies, ought to be avoided with the utmoſt caution. Our attention, however, ought to be turned to delivering them of the fœtus with all manner of diſpatch. Repeated bleeding alſo frequently allays convulſions, and accelerates parturition ‡. If that does not prove of ſufficient ſervice, the fœtus ought to be extracted by the hand.

* *Diſſert. Epiſt.* † Meade, *Oper.* p. 43. ‡ Mauriceau, T. i. l. 2. c. 28. Smellie, *Reflect. on Slow and Painful Labours, &c.* p. 60. *et. ſeqq.*

275. Likewiſe morbid ſtates, and peculiar acrimonies of the blood, by which the diſeaſe is either excited, or kept up, are to be corrected, derived, and evacuated by the proper remedies, namely, by diluents, attenuants, demulcents, ſheathers, diaphoretics, antacids, and alkaline, antiſcorbutic, and antivenereal means, as alſo by means of the bath, friction, iſſues, epiſpaſtics, and thoſe things which gently promote all the excretions. Among the alteratives are particularly recommended, the juices of ſuccory, taraxicum, fumatory, baum, brook-lime, noſe-ſmart, or decoctions or infuſions of theſe; whey, milk; the ſoup of frogs, eels, vipers, and water-gruel; medicated waters; crude antimony; æthiops mineral; mercury; and ſimilar remedies, the ſelection and employment of which are cautiouſly to be accommodated to the various cauſes and indications. The venereal ſtimulus, and quantity of ſemen, from which convulſions occaſionally proceed, are diminiſhed, checked, and prevented by bleeding, ſpare and cooling diet, abſtinence, the drinking of water, antiphlogiſtic and aceſcent remedies, nitre, caſſia, manna, tamarinds, cryſtals of tartar, the ſeeds of melons, hemp, and *agnus caſtus*, the leaves of the water-lilly, and marriage. To theſe ſome

add camphor, but improperly; for it ſeems rather to have a tendency to rouſe than to allay the venereal deſire. On the other hand, if the complaint proceeds from exceſſive venery, or drinking too much wine, or mental affections of long continuance, continence, abſtinence from wine, the cold bath, peruvian bark, caſcarilla, ſteel, travelling, riding, exerciſe, change of air and climate, juicy meats, and, laſtly, milk, reſtore its ſtrength and due nouriſhment to the debilitated frame. If the ſuppreſſion of evacuations has given riſe to the complaint, they muſt be recalled. In children it frequently happens that the drying of the cruſta lactea, or of running ulcers, excites convulſions. In that caſe the head ought to be ſhaved, and ſomething clapped on it to occaſion ulceration. A plaſter conſiſting of an ounce of the *emplaſtrum de meliloto*, and one drachm of the powder of cantharides, has been found to anſwer the purpoſe. It is likewiſe attended with advantage to adminiſter internally the powder or decoction of the *Iacea tricolor*, or *flos trinitatis*, as it is named in the ſhops *. For it is conſidered as a ſpecific by Strack. It certainly poſſeſſes the quality of drawing the matter of the cruſta lactea outwards. When children reject this remedy it has been attended with advantage to adminiſter it to the nurſes who ſuckle them.

* The efficacy of this remedy in the cruſta lactea of infants has been celebrated in an expreſs eſſay by Strack, who affirms having employed it with ſafety and advantage for twenty years. The decoction is thus prepared: Rec. Foliorum Iaceæ dictæ floris trinitatis recent. vel ſiccat. m. j. conciſ. decoq. in lac vaccin. q. s. Let it be given after filtration, morning and evening. The following form of the powder is employed: Rec. Foliorum dictæ herb. in umbra ſiccator q. v. contund. et f. pulv. De hoc ſumatur drachma dimidia, et infundatur per duas horas in lactis vaccini q. s. Deind. bull. et mox cola per ſetaceum. Pulticula hæc detur mane, et repetatur veſperi. This remedy may be added to water-gruel. The milk does not become acid in conſequence of it, nor of a nauſeous taſte, but it is condenſed into a kind of cream. During the firſt eight days of taking the remedy, the cruſta lactea, if it be already preſent, is increaſed, becoming more manifeſt, thicker, and more diffuſed, and the urine acquires a bad ſmell. If it is not preſent, but lurking in the ſyſtem, it is expelled and called forth. The employment of it is continued until the complaint completely appears, afterwards the cruſts dry and fall off; which generally happens in a fortnight afterwards. When the deſquammation of the cruſts has taken place, it becomes neceſſary to ſtill perſiſt for ſome time in the employment of the remedy, that the whole fomes of the diſeaſe may be extinguiſhed. For this author conſiders that the complaint ariſes from a peculiar ferment, communicated by the mother or nurſe, without being able to define what the nature of it is.

276. Hitherto I have been ſpeaking of the remedies which may be ſerviceable in convulſive diſeaſes in general; I ſhall now proceed to treat particularly of thoſe which are peculiar to certain ſpecies of the complaint. And to begin with tetanus, which is a truly terrible complaint, though in general of very rare occurrence among us:

It is moſt proper to aſſail it and its various ſpecies and degrees, providing the ſtrength allow, and eſpecially if it be conjoined with fever and an inflammatory diatheſis of the blood, notwithſtanding of the objections which ſome authors have to it*, by bleeding, by the tepid bath, or that of oil, by injections, fomentations, and unctions, which prove ſoftening, relaxing, and gently reſolving, applied to the ſpine of the back, and by camphor, muſk, and other antiſpaſmodics. A young man of fifteen years of age, after having complained for ſome days of a lancinating pain in all his limbs, without any evident cauſe, was ſeized with univerſal tetanus. His arms and hands were extended along the trunk, perfectly rigid, and very firmly clinging to the body; his legs and feet were extended in the ſame manner. The belly was ſmall and contracted, and as hard as a ſtone, not painful to the touch, the ſpine of the back was perfectly rigid, the neck immoveable, the jaws firmly ſhut, and the maſſeter and temporal muſcles ſwelled and hard. Between the inciſor teeth, which were broken, there was a ſmall ſpace through which ſome ſoup or medicine could be introduced. The tongue, however, remained voluble, the eyes lively, the mind was not oppreſſed, the reſpiration was ſufficiently good, the pulſe uniform, not quicker than natural, and free. This patient was gradually recovered by Störck, without employing the bath and fomenta-

tions, which could not be uſed in the hoſpital, by means of horſe dung boiled in beer, and applied warm; by ſpirit of ſal ammoniac ſaturated with vinegar, taken in ſpoonfuls, to the extent of a drachm, in three ounces of the water of rue; anointing and rubbing the ſpine of the back twice a-day with the oil of verbaſcum and ſpirit of ſal ammoniac, and applying dry cupping-glaſſes every other day to the ſhoulders and ſpine †. Some recommend the cold bath, particularly if the patient be of a muſcular habit, and if it be the ſummer-ſeaſon, and very warm weather. For I do not deny, that by means of cold the ſenſibility of the nerves is lulled, and the heat of the blood allayed. But the diſeaſe frequently derives its origin from cold and moiſture. The employment of the cold bath, therefore, requires a very prudent and judicious phyſician to prevent any bad conſequence. But of all the remedies which are employed at preſent, the preference is given to the preparations of opium, adminiſtered boldly, and after ſhort intervals. Home has obſerved a tetanus quickly reſolved by the uſe of opium, when all other remedies had proved of no ſervice ‡. In like manner Jo. Chr. Ant. Theden recommends the treatment of tetanus by means of opium ‖. Parr alſo extols the efficacy of opium in opiſthotonos. He alleviated the diſeaſe, firſt by giving a grain of opium every hour, and afterwards every ſecond hour, in

conjunction with the hot bath, and he afterwards completely overcame the diſeaſe by increaſing the doſe, continuing it to the extent of upwards of twenty grains in the courſe of the day. At length he gradually diminiſhed its doſe. In the mean time he employed a julap of vinegar and camphor, and the like §. Winſlow alſo, in ſymptomatic tetanus, and triſmus, as in that ſupervening in a fracture of the os femoris, experienced the utility of employing laudanum ¶. Hillary, too, recommends copious doſes of opium and muſk, repeated at proper intervals **. In the treatment of opiſthotonos, as occurring in South Carolina and other warm climates (255. note), ariſing from cold applied to the body when warm, in the ſame manner as warm, acrid, and bliſtering remedies prove hurtful, and, according to Chalmers ††, gentle purgatives, emetics, and diaphoretics, afford no relief, ſo, on the other hand, the warm bath, the liberal employment of opium, and, in the caſe of plethoric patients, bleeding, are the only remedies which afford any favourable expectations. He adviſes the patients to be kept in the hot bath until the pulſe become ſofter and fuller. He recommends rubbing the neck, back, and breaſt while they are lying in the bath. He propoſes repeating the doſe of opium when the action of the former one has ceaſed, and continuing it until the excruciating ſpaſm under the enſiform cartilage, and other convulſions, remit of their

violence. In the mean time he does not omit clyſters, fomentations, liniments, and a few days after the ſolution of the ſpaſm he adminiſtered a gentle cathartic. Huck ‡‡, an ingenious army-ſurgeon, cured the opiſthotonos and locked-jaw, which occur on imprudently expoſing wounds to the air, by exhibiting a grain of opium every hour for forty-eight hours, or by half an ounce of muſk, mixed with ſugar, and beat up with a drachm of opium, and taken in ſome julap, to the extent of a ſpoonful at intervals, ſo as to exhauſt the whole compoſition in twenty-four hours. But in my opinion the praiſes of opium ought to be reſtricted; nor is it proper to employ upon any occaſion ſo large a doſe, before cautiouſly aſcertaining how the former doſes are borne, leſt, as often happens, the diſeaſe be extinguiſhed, together with the patient's life. Thoſe practitioners who recommend the liberal employment of opium, ſeem only to relate the caſes in which it has proved of ſervice, while they paſs over in ſilence the fatal effects of which it has at times been productive. Bilfinger, although he obſerves opium to be recommended by others, not only reſtricts ſuch employment of it with the utmoſt caution, but even rejects it on account of conſidering it as hurtful to the nerves ‖‖.

* Hillary, *Med. Obſerv.* † *Ann. Med.* i. p. 10. ‡ *Princ. Med.* ſect. vi. ‖ *Com. Lipſ.* vol. xviii. p. 614. § *Med. Obſerv. and Inquir.* vol. iv. P. 4. and *Com. Lipſ.* vol. xviii. p. 394.

¶ *Collect. Societ. Med. Hafnienſ.* vol. i. p. 304. ** *Obſervations on the Changes of the Air*, Lond. 1759. †† *Med. Obſerv. and Inquir.* vol. iii. ‡‡ *Med. Obſerv. and Inquir.* ann. 1758, and *Com. Lipſ.* vol. viii. ‖‖ L. c. p. 100. Marzar alſo, in the girl labouring under rheumatic tetanus, whoſe caſe has already been mentioned, obſerved the moſt pernicious effects produced by the opium, particularly fainting fits of frequent occurrence, which proved almoſt fatal. Did this proceed from a peculiar idioſyncraſy?

277. It is a very common obſervation of ſurgeons, that both univerſal and partial tetanus, particularly that of the lower jaw, ſupervenes as a ſymptom, not only in wounds, which was formerly noticed from Huck, but alſo in the caſe of amputations, compound and ſimple fractures, and luxations. This is ſaid to happen univerſally, particularly in the Eaſt Indies. This complaint generally comes on upon the fourth day after amputation, and generally proves fatal in four or five days. Biſſet, however, adduces an inſtance of a patient having been cured upon the ſixteenth day. He contends that the only remedy is the peruvian bark, particularly in the hot climates, where gangrene is apt to enſue, taken copiouſly in the form of a decoction, and conſtantly applied to the amputated limb, by rags dipped in it *. A locked jaw ſupervening after wounds, was frequently cured by Bilguer † by uſing epiſpaſtics, veſicatories, and inciſions of the cheeks, on which he afterwards poured the oil of turpen-

tine, by opening the jugular vein and temporal artery, and by nouriſhing clyſters, and volatile remedies. Biſſet likewiſe affirms that when tetanus ſucceeds to inflammation of the ſtomach, it is removed by repeated bleeding, which appears highly probable. I once obſerved an univerſal ſympathetic tetanus, which occurred in conſequence of a wound in the metatarſus, which a peaſant had received from a ſcythe having dried up too ſoon. He obtained relief in particular from the hot bath, and from the opening of the wound, by which a paſſage was made for the pus or ichor ‡. Monro propoſes the rubbing in of mercurial ointment for the cure of tetanus ‖. De la Roche mentions his having been ſucceſsful in curing tetanus in the ſame manner §. And Boveix experienced ſimilar effects from employing the ſame remedy ¶.

* *Medical Eſſays and Obſervat.* vol. 3. p. 96. to 100. † *Nouveaux Mémoir. de l'Acad. Royal des Scienc. et Bell. Lettr. de Berlin* an. 1770. p. 60. ‡ See a hiſtory in *Sagg. de Medicin. Pratic.* P. 2. p. 93. ‖ *Eſſays of Edinb.* vol. iii. § *Journ. de Medec.* T. xl. p. 213. ¶ *Journal de Medec.* Septemb. 1774. p. 222.

278. With regard to St Vitus's dance, or the ſcelotyrbe of Sauvages, if credit be due to Sydenham, it is cured by repeated bleeding and purging *. We muſt next have recourſe to anti-

ſpaſmodics; dry cupping-glaſſes muſt be applied to the affected limbs, and ſtrengthening remedies, as peruvian bark, ſteel, and the cold bath, employed. Meade indeed mentions, that he never found any difficulty in completely removing St Vitus's Dance, by the frequent immerſion of the body in the cold bath, and by employing chalybeates †. We read of a boy affected with St Vitus's dance having been cured by Gaubius by means of anthelminthics ‡. Max. Jac. de Man obtained the greateſt advantage from employing electricity in a girl of ten years of age, who laboured under this complaint ‖. Alliet alſo employed electricity, together with diluents, aperients, antifebrile and ſtrengthening remedies, change of air, nouriſhing diet, and particularly exerciſe §. A pregnant woman likewiſe, who had been attacked with St Vitus's dance, derived benefit from the employment of peruvian bark, exerciſe, and a proper regimen ¶. Biſſet affirms that the utmoſt advantage is afforded by continuing to take, for a conſiderable length of time, an electuary containing an ounce and a half of the flowers of ſulphur, of the powder of the root of piony and wild valerian *ana* three drachms, of the cinnabar of antimony, two drachms, of muſk and caſtor, *ana* one ſcruple, and of ſimple ſyrup of ſugar ſufficient to form the electuary. As the diſeaſe goes off, he recommends the employment of the tincture of peru-

vian bark, and bathing in ſea-water, the utility of which laſt he affirms to have frequently experienced, while he obſerved that bathing in river-water rather proved detrimental. Likewiſe in the caſe of an obſtinate diſeaſe, he mentions having applied a bliſter to the back, and laſtly, to the os ſacrum, with advantage; as alſo to have employed repeated rubbing of the neck and whole ſpine of the back with ſpirits of wine. On the other hand, contrary to what Sydenham tells us, he affirms that bleeding and purging were prejudicial **. P. S. Wauters, in five hiſtories which he adduces, endeavours to ſhew the antiſpaſmodic power of aſſafœtida, employed liberally not only in St Vitus's dance, but alſo in other very ſevere convulſive diſeaſes, and in thoſe combined with paralyſis, epilepſy, and mania. He diſſolves three drachms of aſſafœtida in ſix ounces of ſpring-water, and to render it agreeable, adds an ounce of the ſyrup of violets. Of this mixture he preſcribes one or two ſpoonfuls to be taken every half-hour, for ſome days, and as ſoon as the diſeaſe begins to abate, he recommends gradually diminiſhing the frequency of its doſes ††. Mahon aſcertained by experiment, that antiſpaſmodic remedies and the peruvian bark poſſeſs the greateſt efficacy in curing this complaint when it proves obſtinate ‡‡. I myſelf lately performed a complete cure of a confirmed

and perfect St Vitus's dance, in a girl of twelve years of age, who ſome years before had been ſubject to the ſame complaint, merely by the employment of the flowers of zinc.

* *Oper. Proceſſ. Integr. p.* 686. † *De Imp. Sol. et Lun.* p. 17. ‡ *Com. Lipſ.* vol. iii. p. 456. || *Com. Lipſ.* vol. xviii. p. 601. § Orteſchi, *Giorn. Med.* T. ii. p. 127. ¶ *Giorn. Med.* T. iii. p. 67. ** *Med. Eſſays and Obſerv. cit.* p. 165. to 170. †† *Journ. de Méd. Aout* 1781. ‡‡ *Journ. de Méd. Juin* 1782. T. lvii. p. 553.

279. It has already been remarked (278.) that electricity proves ſerviceable in St Vitus's dance. It is proper to obſerve, however, that the ſame remedy, and particularly the electrical ſtroke, as it is called, is ſometimes the cauſe of convulſive motions. When the convulſions proceeded from that cauſe, and conſtantly increaſed, they were allayed by Owen by adminiſtering muſk to the extent of half a drachm, firſt every four hours, and afterwards only twice a day, in the form of a bolus *. The cramp alſo, although it in general quickly diſappears, ſcarcely requires the aſſiſtance of a phyſician. Sometimes, however, it is ſo troubleſome, particularly in pregnant women, as to require attention being paid to it. Generally merely by gentle friction of the convulſed part, or by rubbing upon it the ſpirit of juniper-berries, or theriacal or Hungary water, it is removed. It is of ſervice alſo to defend the part from cold. If theſe prove inſufficient, we ought to conſider

whether or not there be reaſon to ſuſpect that plethora occaſions the complaint. If it be preſent, it is quickly cured by means of bleeding. But it ſometimes happens, as I have had occaſion to ſee, that the complaint is excited by acrid and tenacious lymph irritating certain muſcles and their ſheaths. In that caſe the bath, fomentations, and the decoctions of the woods, which prove attenuating and diaphoretic, gradually remove the complaint.

* *Med. Obſerv. and Inquir. by a Society*, &c. vol. iii.

280. It now becomes neceſſary to ſay ſomething of the peculiar methods of treatment of epilepſy itſelf. If the ſymptoms preſent point out its approach, as ſometimes happens, authors recommend preventing it by means of opium conjoined with antiſpaſmodics, for inſtance, a grain of the *laudanum nepenthes Quarcetani*, and the like quantity of camphor, formed into a bolus in conjunction with ſome proper conſerve or extract. But if it appear beforehand that the diſeaſe is about to aſcend from ſome remote part to the head, it ought to be checked by means of a tight bandage and painful frictions. Likewiſe cupping-glaſſes, leeches, or red-hot iron, may be applied to the part from which the diſeaſe ſeems to begin or proceed, with the probable view of deſtroying the internal cauſe. A female patient, about thirty-eight years of age, for twelve years laboured

under an epilepſy which returned once a-month. At length, however, the attacks became ſo frequent as to return four or five times every day, and continue an hour, or an hour and an half. All kinds of evacuant remedies, as well as a great many antepileptic and cephalic ones, and not a few others, had been tried, but in vain. The paroxyſm uniformly began in the leg, about the lower part of the muſcles named *gemini*, and immediately upon ſeizing the head ſhe fell down. She was then obſerved to foam at the mouth; and the lips, neck, and limbs were convulſed in a ſurpriſing manner. While the woman was viſited by Mr Short, who attended her, ſhe was attacked with a fit, and fell down, upon which he examined the leg affected, without being able to diſcover in it any redneſs, hardneſs, or laxity, by which it differed from its healthy condition. However, as he ſuſpected that the cauſe of the complaint exiſted in the part from which it uniformly commenced, he forced his lancet two inches into it, and ſtruck againſt a hard body, which, after having gently ſeparated it from the muſcles, he extracted with a ſmall forceps. It proved to be a hard and cartilaginous ſubſtance, or ganglion, of the ſize of a large pea, and reſted upon a nerve, which he was obliged to cut, in order to take it out. The woman immediately came to herſelf, and declared that ſhe felt perfectly recovered. She very quickly regained her

vigour, both of mind and body, nor did ſhe afterwards experience an attack of epilepſy *. Herbert alſo cured a chronic and habitual ſympathetic epilepſy, which aroſe from the great toe, *by binding a ligature above the knee, and deſtroying the nerve of the great toe* †.

* *Medical Obſ. and Inq. by a Society*, &c. vol. iv. † *Com. Lipſ.* vol. iv. p. 233.

281. But when the patient is at length attacked with a fit, we muſt immediately endeavour, as far as poſſible, to prevent his receiving any injury from the violent agitation of his body. He ought therefore to be put into a bed, in a light apartment, with his head raiſed. A piece of leather, or ſome folds of linen, ought to be thruſt in between the teeth, to prevent the patient from biting his tongue. It is a good plan alſo to gently extend the convulſed limbs, to anoint them with oil, and to gently rub the neck, throat, head, and other parts, with the warm hand, to apply a bladder half full of warm water, or emollient fomentations, to the hypochondres and belly, by which not only the ſpaſms are more quickly allayed, but alſo the reſpiration rendered eaſier. Hippocrates, as Van Swieten mentions, to the oil added wine in which the ſeeds of hyoſcyomus had been infuſed, and with this liniment, as inducing ſtupor, he cauſed the convulſed limbs to be anointed. But if the paroxyſm be protracted longer, and

the patient appear for the moſt part overwhelmed with ſtupor, ſo as to give reaſon to apprehend an attack of apoplexy, we may have recourſe to more powerful remedies, as painful binding of the limbs, dry cupping-glaſſes, the perfumes of oil of amber, ſpirit of hartſhorn, and ſal ammoniac, tincture of caſtor, or aſſafœtida, to be applied to the noſe, injections, and ſimilar remedies, with the view of rouſing the patient. But of all the remedies, bleeding generally proves moſt ſerviceable, eſpecially from the jugular vein or temporal artery, providing the diſeaſe neither depends upon inanition nor loſs of ſtrength. For during the long-continued contraction of muſcular parts, although of the clonic kind, and accompanied with alternate relaxations, it muſt neceſſarily happen, that the blood is forced in too great quantity to the head, while its return to the heart is very much retarded, ſo as to occaſion an oppreſſion of the brain on all hands, in conſequence of the turgeſcence of the veſſels and ſinuſes of its membranes. In which caſe, every perſon muſt perceive with what advantage the emptying of the veſſels, and relieving of the brain, by bleeding, will be attended. I have repeatedly employed it with the greateſt ſucceſs in long-continued paroxyſms, particularly when the diſeaſe had proceeded from plethora, either real or ſpurious, or from the checking of ſome cuſtomary evacuation of blood, or from a metaſtaſis of the matter of gout and arthritis,

or from any violent or ſudden paſſion of the mind.

282. When the paroxyſm is not preſent, we muſt inquire into the cauſe from which the diſeaſe proceeds, and regulate the cure intirely by its nature, in the ſame manner as I have already preſcribed in the general treatment of convulſive affections (271. 272.). The firſt remedies are thoſe which ſurgery affords. Of theſe bleeding appears to be proper when plethora is preſent, when the patient is of a good habit, and in the prime of life, or when the menſtrual or hemorrhoidal diſcharge, or an hemorrhage from the noſe, happen to be ſuppreſſed. It may likewiſe be repeated, by way of preventative, about the equinox, and ſometimes alſo about the ſolſtice, in plethoric people. If the patients be liable to hemorrhois it is proper to apply leeches to the anus, that the cuſtomary evacuation may be again recalled. This remedy is alſo attended with the utmoſt advantage in hypochondriacal and hyſterical patients, in whom epilepſy frequently takes place, in conſequence of congeſtions of the inferior abdominal viſcera. If the diſeaſe comes on in conſequence of the ſtopping of the menſes, and recurs periodically every month, their place may be ſupplied by a ſlight bleeding, employed a little before the uſual time when the menſes appear, until the paroxyſms ceaſe, and the ſtrength is improved. I have ſeen an epilepſy which aroſe

from this cauſe, removed by employing this method of cure upwards of a year *. Some recommend applying the cautery a little below the occiput, or to the coronal ſuture; and in fact it appears from obſervation, that ſometimes very remarkable benefit has been obtained in this way. In children, in particular, an iſſue made by burning in the back-part of the head, when they are of a full and juicy habit of body, or abound with a ſerous colluvies, or when the cruſta lactea has been ſuppreſſed, has frequently been productive of the greateſt benefit. In ſome habits, however, bliſters ſeem to be ſafer, and not leſs uſeful, if the ulcers are kept open for a good while. A boy of five years of age, who for two years had been accuſtomed on falling aſleep to be attacked with epilepſy, in conſequence of which he had become dull, and loſt the power of his legs, ſo as to be no longer capable of ſtanding, after innumerable remedies had been employed to no purpoſe, was at length completely cured of the epileptic attacks, by Seraus, and recovered the uſe of his legs, merely by the application of a bliſter to the poſterior extremity of the ſagittal ſuture ‡. Meade uſed to produce ulceration in the occiput by means of cantharides, and, tearing off the epidermis, he allowed the ſerous fluid to continue running for a long time, and, as he affirms, always with the greateſt ſucceſs ‖. Long before them, however, the efficacy of bliſters applied to

the head ſhaved, in this diſeaſe, had been experienced by Septali, whoſe words I ſhall tranſcribe. "In confirmed epilepſy occaſioned by an affection of the brain, the moſt efficacious method of treatment is applying all over the head, previouſly ſhaved, a bliſter, in order to attract the virulent humours to the ſurface, leaving the ulcers in the head a long time open, that the ſerous fluids may continue long to be diſcharged by them. For I have obſerved the moſt obſtinate diſeaſes of the head cured in this manner §."

* Likewiſe my friend Roſetti, Profeſſor of the Practice at Ceſena, employed a ſimilar method of cure. He has informed me in a letter that he cured a great many epileptic patients intirely in this way. He firſt gently purged the patient with rhubarb, manna, or caſſia. Afterwards, about two days before full moon, he ordered about five ounces of blood to be taken from the vein on the back of the hand; and this he repeated every month, except April and October, in which, in place of veneſection, he thought it better to apply leeches to the anus during the laſt ſtage of the decreaſe of the moon. During the other months, as I have already ſaid, he drew blood from the vein on the back of the hand, beginning firſt with the left hand, and next proceeding to the right, obſerving the ſame order for a twelvemonth. During the whole of this period he cauſed the patient every morning to ſwallow a drachm of the powder of horſes teſticles in weak broth, and in the evening, at bed-time, he ordered the temples, occiput, neck, and noſtrils, to be anointed with the oil of ſoap. He preſcribed diet conſiſting of ſoups, eggs, and boiled fleſh, and for drink merely the water of the jujube tree, altered with red-hot ſteel. He remarks that this method of cure is calculated only for the epilepſy proceeding from too

great a quantity, or heat of the blood, and for young plethoric people. So far Roſetti proceeds in his epiſtle. Concerning this method of treating epilepſy, if I remember well, mention is likewiſe made by other writers and noſtrum dealers.

† Heiſter, *Inſtit. Chir.* P. ii. p. 38. and before him Car. Piſo, *De Morb. Cap.* ſect. 2. P. 2. c. vii. ‡ Morgag. *Epiſt. Anat. Med.* x. n. 8. || *De Imp. Sol. et Lun.* c. 2. p. 8. § *Anim. et Caut. Med.* vi. n. 55.

283. Pharmacy alſo affords many medicines for overcoming epilepſy. Among theſe all kinds of evacuants, but particularly emetics and cathartics, are recommended. In the ſympathetic ſpecies occaſioned by a colluvies in the *primæ viæ*, thoſe evacuants which gently purge the belly, *per epicraſin*, hold the principal rank. Galen, as Felici has very properly remarked, by employing nearly the ſame method of evacuation, performed a cure *. In the employment of purgatives it has been a general opinion that they are uſed with moſt advantage before the new moon, full moon, and quarters. In the ſympathetic epilepſy proceeding from a morbid collection in the *primæ viæ*, which Baglivi † found to occur moſt frequently in children, he attempted the cure by means of ſalt of vitriol taken to the extent of a ſcruple or drachm in ſoup, by which vomiting is excited, and the hurtful matter which ſometimes cannot be removed by cathartics, is thrown off. Others attempt that by ipecacuanha, by tartar emetic diſſolved in a great quantity of water, by oxymel of ſquills,

by ſyrup of tobacco, and other emetics: nor do they employ theſe in the ſympathetic epilepſy only, but ſome are of opinion that they ought likewiſe to be attempted in the idiopathic ſpecies. And although they do not want inſtances of ſucceſsful cures performed in this way, I ſhall ſtill continue to inſiſt upon the propriety of the remarks which I have brought forward elſewhere concerning the extreme caution with which emetics are to be employed in idiopathic diſeaſes of the head. Others prefer cathartics. By means of them they hope, that the impacted humour, which proves hurtful to the brain and nerves, may be removed, attenuated, derived elſewhere, and, laſtly, excreted. Nor do they refrain from hellebore itſelf, from colocynth, elaterium, and other draſtic purgatives. Some wonderful cures of epilepſy are ſaid to have been performed by means of them. An old woman in Bologna formerly ſold a noſtrum by which many people were ſaid to have been cured. It was ſuppoſed to be the tincture of colocynth, extracted by means of ſpirit of wine, of which a ſmall cupful uſed to be given every day for ſome weeks. I knew a nobleman, however, who, although he had employed that remedy with ſome relief, notwithſtanding remained epileptic till he arrived at old age. I do not deny, however, that ſometimes, by means of cathartics, the cauſe of epilepſy may be completely removed, but they require being

in the hands of a practitioner of great prudence; for they may not be calculated for every temperament, age, ſex, habit of body, and cauſe ‡.

Diſſert. del Preſag. Med. p. 198. † *Append. de Aſthmat.*

‡ Concerning the cautious employment of emetics and cathartics in the cure of epilepſy, let us hear what Septali, a celebrated phyſician of Milan, ſays. Although otherwiſe not averſe to emetics, he obſerves: "As I obſerve moſt authors, after the example of Aretæus and Avicenna, employ the moſt powerful emetics and cathartics in preventing epilepſy, I muſt confeſs, from long experience, that I never ſaw this diſeaſe proceeding from the proper affection of the brain cured by powerful emetics, which, on the contrary, reduce the patients to a more deplorable ſtate. But I have obſerved the more violent purges ſometimes prove ſerviceable, providing they were not too frequently employed: for the animal ſpirits being exhauſted by their too frequent uſe, apoplexies are frequently occaſioned."

284. The efficacy of opium in the convulſive affections, and in tetanus itſelf, has already been ſhewn (271. 276.). Why may we not expect the ſame good effects from its employment in epilepſy? Morgagni at leaſt, diſcovered its wonderful utility in the cure of this complaint, which he has confirmed by various inſtances *. He mentions, in the firſt place, that a boy who had become epileptic in conſequence of terror, and had received no benefit either from bleeding, or from the remedies calculated for expelling the ſerous fluid, was reſtored to his former health by employing daily, a ſingle grain of opium in

divided doſes. Nor did it prove ſerviceable only to this boy labouring under epilepſy proceeding from that cauſe, but an old man alſo, of ſixty-eight years of age, experienced its beneficial effects. This patient laboured under epilepſy proceeding from conſent with the hypochondres, and at the ſame time ſeemed diſpoſed to hydrothorax. Cathartics, aperients, and diuretics, were employed to no purpoſe; nay, the diuretics were found to aggravate the paroxyſms, probably on account of their poſſeſſing ſomewhat of a ſtimulant property. He at length recovered, in conſequence of having taken half a grain of opium daily for a long time. Nor does it ſeem unreaſonable to expect ſome advantage from the employment of opium in hyſterical epilepſy, and any other ſympathetic ſpecies, or when it is conjoined with exceſſive ſenſibility, or originates from pains.

* *Epiſt. Anat. Med.* ix. n. 6. & 7.

285. In no diſeaſes are more ſpecifics boaſted of than in epilepſy. I may enumerate the principal ones. Van Swieten * writes, that miſſletoe has long been celebrated as poſſeſſing a remarkably ſtrengthening power, and therefore has acquired a great name in the cure of epilepſy ariſing from debility. But long before this, its antepileptic power was known to Boyle, who mentions the caſe of a lady of rank who had long laboured under a kind of hereditary epilep-

ſy, and was at length reſtored to perfect health, after many remedies had been employed in vain, merely by the powder of genuine miſletoe, taken for ſome time daily about the time of the full moon, to the extent of a drachm, in the water of black cherries †. Loeſeke cured two patients of an epilepſy, the cauſe of which he could not diſcover, by adminiſtering every three hours, half a drachm of miſletoe, together with a decoction compoſed of four ounces of miſletoe, reduced to a fine powder, and an handful of the flowers of piony, thrown into ſixty ounces of boiling water, and macerated for ſome time, adding to the liquor when ſtrained two ounces of the ſyrup of piony to create an agreeable taſte ‡. A great many authors likewiſe recommend as a ſpecific in epilepſy, wild valerian root, after Fabius Columna had experienced its antepileptic powers in his own perſon, and many patients beſides ‖. The authority of Columna has been confirmed by Marchand §, who having ſet about ſome new experiments for the purpoſe, aſcertained the wonderful efficacy of this remedy ¶. From the obſervations of this author, it appears that this root ſometimes purges the belly, and occaſions the diſcharge of lumbrici, and ſometimes cauſes a diaphoreſis. Hence Planc, in his notes upon the Phytoboſanum of Columna, has aſcribed to it merely an anthelminthic property, and is convinced that it proves to be a remedy only in the

ſpecies of epilepſy which is occaſioned by worms. Be this as it may, moſt authors of the preſent day conſider it as being one of the efficacious remedies againſt epilepſy. Among the modern writers who have celebrated its virtue, I cannot paſs over Tiſſot ** and Scopoli ††. But in order to prove efficacious, it ought to be dug in the month of March, before its ſtem appears; and, after being dried, reduced to a very fine powder, of which a drachm, or a drachm and a half, or even two drachms, may be employed daily ‡‡.

* § 1084. † *De Utilit. Nat. Philoſoph.* P. ii. ſect. 5. cap. 7. ‡ *Com. Lipſ.* vol. v. p. 126. ‖ *In Phytobaſano.*

§ Before Marchand, Panaroli, induced by the authority of Columna, frequently employed this remedy with ſucceſs. See his *Obſerv.* 33. cent. 1.

¶ *Mem. de l'Acad. Royal,* 1706. p. 430. *ed. Amſterd.* ** *Traité de l'Epilepſ.* art. 25. p. 300. †† *Flor. Carniol.* T. i. p. 33. ‡‡ *Phytobaſ.* p. 120.

286. According to Riverius, the learned Crato pronounced cinnabar to be the very magnet of epilepſy. Hoffman approved particularly of the native cinnabar in epilepſy, as well as in other affections of the head proceeding from an effuſion of ſerum or blood. For it appeared to him to poſſeſs a wonderfully reſolving power; and with good reaſon, as it is

compoſed of mercury and ſulphur intimately united. For mercury, although, when improperly adminiſtered, it is ſaid to have ſometimes occaſioned epilepſy, has juſtly obtained a place among the antepileptic remedies: for it has frequently anſwered the phyſician's expectations. Dovar uſed to employ ſweet mercury mixed with the cinnabar of antimony, and to a conſiderable extent *. I myſelf have ſeen an epileptic patient cured by means of ſweet mercury, to whom I adminiſtered this remedy for upwards of thirty days, in order to prevent the acceſſion of hydrophobia, in conſequence of the bite of a mad dog. Trogher † prefers the mercurial pills to other preparations ‡, by half a drachm of which, given every other day for ſix months, and afterwards every fourth or fifth day only, for other ſix, with a decoction of wild valerian root taken above it, he reſtored to perfect health a woman labouring under epilepſy. Nor is there any doubt that venereal remedies, eſpecially if there be any ſuſpicion of the preſence of lues venerea, will be much more ſerviceable. Benedictus Sylvaticus ‖, Willis §, Ettmuller ¶, Rolfinck **, Houſſet ††, and other very experienced phyſicians, recommend exciting a ſalivation in idiopathic epilepſy, when it proves obſtinate, by means of either the internal or external employment of mercury.

* *Edin. Med. Eſſays*, vol. ii. † Dall' Arme, *Sag. di Med.*

Prat. P. ii. p. 92. & *Nov. Letter. de Firenze del* 1762, p. 183. where the whole obſervation is inſerted.

‡ The formula of the pills was the following:

Rec. Hydrargyri unciam unam. Solv. et exſting. cum terebinth. ʒvi. deinde add. Agarici et extract. Rhabarbari, ſingulorum drachmas duas, Aloës ſuccotrinæ drachmas tres. M. f. pil.

‖ *Conſult.* 47. § *De Morb. Convulſ.* c. 3. ¶ *Oper.* T. ii. art. viii. p. 884. ** *Med. Conſult.* p. 193. †† *Mémoir. ſur. l'Epilepſ.*

287. Likewiſe Fuller's *electuary* deſcribed in the *Extemporaneous Pharmacopœia*, has acquired great celebrity. It is compoſed of ſix drachms of pulveriſed bark, and two drachms of Virginian ſnake-root. Theſe are reduced into the form of a ſoft electuary, with the ſyrup of the flowers of piony. It has been pronounced to be a moſt efficacious and certain remedy by an anonymous author, who, along with Fuller, has communicated its compoſition, and the mode of employing it. The communicator of this arcanum obſerves: "If, after the proper evacuations, a drachm of this electuary, or in ſome caſes a ſmaller doſe, be exhibited to adults, morning and evening, for three or four months, and be afterwards repeated for three or four days before the new and full moon, it completely eradicates epileptic and hyſterical diſeaſes, as well as the convulſive dancing known by the name of the *Chorea Sancti Viti.*" But we ſet ſuch a value

upon this electuary at Milan, that it is indiſcriminately preſcribed in all convulſive diſeaſes, and particularly in the epileptic affections of children, in which I have ſometimes ſeen it employed for years; although, if any benefit was received, I am doubtful whether to aſcribe it to the remedy, or to the patient's advancing in life. I have found it altogether uſeleſs in many patients, and in ſome even not unattended with harm. But whatever good effect it produced, took place in the periodical epilepſies in patients of a cold and moiſt temperament, and of a weak and relaxed habit of body; which certainly ought to be referred chiefly to the virtue of the peruvian bark. After the example of Fuller's electuary, I find another of a ſimilar kind recommended by Meade *, conſiſting of an ounce of pulveriſed bark, two drachms of the powder of wild valerian, together with the ſyrup of orange-peel, beat up into the form of an electuary. "Of this," he obſerves, "after premiſing the proper evacuations, let the patient take a bolus equal to a drachm, morning and evening, for three ſucceſſive months, afterwards repeating it for three or four days before the new and full moon.

* *Monit. et Prac. Med.* c. 2. ſect. iii. p. 37. Lond. 1751.

288. With the view of mitigating, or even curing, the idiopathic epilepſy, Lang employs a mixture conſiſting of a ſcruple of aſſafœtida,

diſſolved in an ounce of hartſhorn, of which he preſcribes thirty drops to be given, before the acceſſion, in the water of leeches, along with caſtor. But he adviſes refraining from it in plethoric people before diminiſhing the quantity of blood by veneſection. Meyer, a celebrated phyſician of England, among ſeveral other remedies which he propoſes for the cure of epilepſy, conſiders as a moſt excellent medicine the powder of the ſeeds of hyoſcyomus employed for upwards of forty days. He recommends beginning with ſix or eight grains, and gradually increaſing the doſe to a ſcruple, or twenty-four grains, in a ſpoonful of the juice of the *ſempervivum*, recently expreſſed †. But this remedy ought to be conſidered as ſuſpicious on account of the narcotic effect which it produces. Modern writers, however, propoſe the extract of hyoſcyomus, which is prepared from the juice of this plant, inſpiſſated before the fire, for removing convulſive affections, and epilepſy itſelf,—particularly if theſe complaints proceed from affections of the mind,—conſidering it as an innocent paregoric; and they confirm its efficacy by adducing experiments which they have made with it. At firſt a grain of the extract is given thrice a-day, and its doſe is gradually increaſed to a ſcruple, and even to half a drachm. But Greding, who adminiſtered that extract to ten patients affected with melancholy and mania combined, to eleven affected with mania, to four-

teen epileptic patients, and to five affected with epilepsy and mania conjoined, concludes, from his experience of it, " That hyoscyomus can neither be exhibited with safety internally, nor is to be considered as a salutary remedy in melancholy and epileptic diseases, as it appears to be to some ‡." They contend also, that the extract of stramony, prepared in the same manner, and given at first to the extent of half a grain twice a-day, its dose being afterwards gradually increased to fifteen or twenty grains, given at intervals in the course of the twenty-four hours, proves beneficial in epileptic affections ‖. Its antepileptic virtue is confirmed by Odhel §; for that extract was exhibited to fourteen epileptic patients in the Hospital of Stockholm, of whom eight perfectly recovered, and five received great benefit, only one remaining in the same state.

* *Miscel. Verit.* fasc. i. p. 59. † *Prax. Mayernian.* l. 1. c. 3. p. 26. ‡ *Adverss. Med. Pract.* Ludwig, P. i. p. 71. *edit.* Lipsi. 1779. ‖ Joach. Spalowsky, *Dissert. Inaug. Med. de Cicut. Flam.* &c. p. 30. § *Edinburgh Med. and Philos. Essays*, vol. i. P. 4. art. 4.

289. Some preparations of copper also have been recommended. A solution of brass, by means of sal ammoniac, properly boiled in water, gives the blue liquor which constitutes the famous antepileptic remedy for children. Boerhaave mentions, " that a few drops of it given in hydromel, upon an empty stomach, by exciting a gentle

commotion, looſeneſs, and nauſea, have a wonderful effect in changing their torpid and delicate ſtomachs; that they excite them, draw off water and phlegm, and deſtroy worms. That in conſequence of theſe effects, certain vitiated ſtates of the fluids, and ſpecies of epilepſy, are removed." The ſpecific of Weiſſman is not unlike the preceding; it conſiſts of vitriol of copper diſſolved in rain-water, ſtrained and completely ſaturated with the ſpirit of ſal ammoniac, upon which, after ſtanding ſome time, the moſt highly-rectified ſpirit of wine is poured, ſo as to cauſe the precipitation of beautiful cryſtals, like ſapphire. Theſe laſt conſtitute the ſpecific againſt epilepſy, which is endowed with remarkable virtue †. Among theſe means ranks the *ſulphur venereum*, the manner of preparing which, whoever wiſhes to know, may conſult a diſſertation publiſhed at Vienna by Paſqualati of Trieſte, chiefly in recommendation of it. But Greding, already quoted, adduces ſeven experiments made to aſcertain the powers of this remedy, from which he concludes in theſe words: "Theſe ſeven hiſtories are more than ſufficient to demonſtrate that this ſulphur of copper, given either in a ſmall or great doſe, proved of no ſervice, either in the cure or alleviation of confirmed epilepſy ‡."

* *Elem. Chem.* T. ii. Proc. clxxxix. p. 263. † *Com. Lipſ.* vol. vii. P. i. p. 137. ‡ *Adverſ. Med. Pract. modo citat.* P. iii. p. 530.

290. The following remedies are not deſtitute of efficacy, namely, muſk, both alone and conjoined with cinnabar, the *liq. anod. min.* of Hoffman, Pezoldt's antepileptic ſpirit of vitriol, the *liq. corn. cerv. ſuccinat.* the animal oil of Dippelius, peacock's dung, flowers of zinc *, the root of white dittany † and piony; rue, baum, the leaves and peel of oranges, the *pulvis epilepticus* of Marchion, the *pulvis de gutteta* of Riverius ‡, the pulvis Hanoveranus, ſpirit of human blood, the antepileptic water of Lang, and an infinite variety of ſimilar remedies. Some, along with Barbetta, exhibit half a drachm of Spaniſh ſoap, boiled up in three ounces of milk, morning and evening, for thirty days, and mention having frequently cured epilepſy in this manner. Milk, in conjunction with Spaniſh or Venice ſoap, particularly aſſes milk, given liberally, and continued for a conſiderable length of time, is celebrated by many, and I find it frequently recommended in the cure of epilepſy by Beccaria, formerly Profeſſor of Medicine in Bologna, a phyſician of the deepeſt medical erudition and long experience, in conſequence of which he had become a practitioner of the greateſt prudence, with ſubmiſſion to thoſe perſons who not only do not approve of, but even affect to deſpiſe his *Conſultations*. They are probably not pleaſed with his elaborate inveſtigations of the cauſes and nature of diſeaſes, which occur throughout, and his very ſimple me-

thod of treatment, which he always prefers to a more laborious and complex one. But that the greateſt excellence of a phyſician in fact conſiſts in theſe two particulars, will be acknowledged by every perſon who has examined the power of medicine, and made himſelf properly acquainted with the delicate ſtructure of the human body, which requires being treated with the utmoſt gentleneſs. For an author who is conſulted ought not only to ſatisfy himſelf, but alſo the phyſician who conſults him, which he cannot do without treating at length of the nature and cauſes of diſeaſes. Moreover, he ought to propoſe thoſe remedies which he himſelf thinks or knows to be beſt adapted to the patient, and which he has experienced to be more friendly to nature. Such is the plan which was adopted by our moſt eminent phyſicians, namely, Redi, Delpapi, Lanciſi, Malpighi, Albertini, Cocchi, Valliſner, and moſt of the Hippocratic ſchool, that is to ſay, of the followers of nature, to whom much is due from medicine, and ſtill more from their patients. This diſtinguiſhed character, reſpected and eſteemed through the whole of Italy, taught by experience, and guided by his own good ſenſe, thought proper in no meaſure to deviate from their example.

* The flowers of zinc were not employed formerly, excepting in external applications, and particularly in inflammations and redneſs of the eyes occaſioned by acrid and corroding

lymph. But when Gaubius learnt that the noſtrum of the celebrated empiric Ludeman, which he uſed under the name of *luna fixata*, was compoſed of them, they began to be employed both by this ingenious phyſician, as well as others, likewiſe internally, in all ſpaſmodic and convulſive affections, and particularly in epilepſy. Gaubius determines the doſe in children to be one grain given twice a-day, and in adults a grain to be repeated every other hour. Van Doevern, however, recommends preſcribing them in another way; he mixes twelve grains of the flowers of zinc with two grains of ſugar, dividing the whole mixture into twelve equal parts, of which he orders one to be taken thrice a-day. Percival did not heſitate to increaſe their doſe to five grains, to be taken thrice a-day. This remedy, as Hart ſuppoſes, appears to poſſeſs, independently of an abſorbent power, a peculiar and ſpecific property, which we name *antiſpaſmodic*. De la Roche (*Obſerv. ſur l'Uſag. Inter. des Fleurs de Zinc inſerées dans le* T. lii. *du Journ. de Med. de Paris*), in conſequence of ſeven or eight years experience of it, affirms that this remedy was never found in any meaſure poiſonous, as is aſſerted by ſome. And not only he himſelf, but likewiſe his friends, employed it indiſcriminately in every convulſive and ſpaſmodic affection, and at every period of life, uniformly experiencing ſalutary effects from it, which laſted at leaſt for ſome time, in all thoſe caſes in which there was not preſent an organic injury rendering them incurable. But even in theſe caſes it appeared to afford relief. He is therefore of opinion, that the flowers of zinc act upon the *vital principle*, as he calls it, by diminiſhing the *irritability of the nervous ſyſtem*, but in a very different way from that in which narcotics act. He does not deny, however, that they ſometimes occaſion vomiting when taken in great quantity: which would indicate their poſſeſſing an irritating, reſolving, and attenuant quality, from which, probably, its antiſpaſmodic property intirely proceeds. But this vomiting does not univerſally take place, nor continue, nor does it always follow the ratio of the quantity taken, as far as he could learn. He likewiſe adds, that when given in a ſmall doſe, namely, to the extent of one or two grains, they

occaſion unuſual alacrity and hilarity. He affirms that they prove of ſervice in the convulſive affections of children, particularly their ſtarting during ſleep, when organic injuries of the brain, and obſtructions of the abdominal viſcera, are not preſent; as alſo in the convulſive cough, and hyſterical convulſive affections of women. Laſtly, he remarks, that half a grain, or even an intire one, is frequently too ſmall a doſe, and ought therefore to be gradually increaſed. He proceeded to the extent of twenty or thirty grains, or even more. To adults he gave firſt two or three grains every three hours, and ſhortly afterwards increaſed the doſe to ſix grains each time, if he obſerved no effect take place, nor any injury enſue, and if nauſea was not occaſioned. This remedy, when taken in the form of pills, is leſs troubleſome to the ſtomach, but acts more ſlowly. In children he begins with the fourth or fifth part of a grain, gradually proceeding to a larger doſe. He denies that it contains any lead, in conſequence of which it might induce the *colica ſaturnina*. But in order to ſet the power of the flowers of zinc in a clearer point of view, he adduces ten caſes in confirmation of their efficacy. But many more inſtances, demonſtrating their antiſpaſmodic property, may be ſeen in the *Edinburgh Med. and Philoſ. Eſſays*, vol. i. P. i. ſect. 1. art. 11. P. ii. ſect. 2. art. 2. P. iv. ſect. 2. art. 3. & vol. ii. P. iii. ſect. 3. &c. and Tiſſot, *Mallat. de' Nervi*, T. ii. P. ii. p. 338.

† The antepileptic powers of white dittany, or the *fraxinella officinalis*, have long ago been aſcertained by the phyſicians of Vienna. Its root, in particular, is ſaid to poſſeſs this virtue. It is uſually exhibited either in the form of powder, eſſence, electuary, or medicated wine. The powder of this root is given twice a-day in a doſe of from five to twenty grains, for ſix weeks at leaſt. The *eſſence* is prepared as follows:—

Rec. Rad. dictamni alb. recent. et minutim conciſ. unc. duas; ſpirit. vini puriſſim. unc. quatuordecim. M. et ſtent in digeſtione, donec fiat eſſentia bene ſaturata. Tempore digeſtionis agitetur ſubinde vas. Poſt purgans exhibitum dari ſolet eſſentia a guttis viginti ad quinquaginta ter in die ad menſem unum, vel duos, vel tres.

The electuary.

Rec. Pulv. rad. dictamn. alb. unc. dimid. conſerv. menthæ unc. duas; ſur. menth. q. s. ut. f. elect. Sumat. æger omni trihorio parvum cochleare.

The medicated wine.

Rec. Pulv. rad. dictamn. albi unc. unam. Limat. mart. non rubiginoſ. drachm. tres. Vini generoſ. Auſtriac. lib. unam. M. digere per horas viginti quatuor. Dein cola. Detur omni bihorio cochlear. unum. Hoc. vinum convenit in chloroſi, et retentione menſtruorum, et ubi ſpaſmis ægri laborant, vel debiles ſunt ex nimia ſeminis, aut aliorum humorum deperditione.

‡ Theſe powders ought to be freed from the nugatory ingredients, as ivory filings, elk's-hoof, aſhes, pearls, the human ſkull, hyacinth, crude hartſhorn, gold leaves, and other things poſſeſſing no kind of antepileptic virtue.

291. But in the midſt of this variety of boaſted remedies, let no one ſuppoſe that epilepſy will always yield to them, or that every ſpecies of epilepſy, although curable, will admit of the ſame method of cure or remedies. Morgagni, with his uſual learning, endeavours to inculcate this idea when he obſerves: "That if epilepſy be ſuppoſed to proceed from induration of the brain, from an abſceſs of a particular kind, from diſtenſion of the veſſels, from water collected either in conſiderable quantity, or ſparingly, or from that which is yellow or limpid, or from other cauſes, or, if it be allowed that theſe are effects only, and that it is fomented, kept up, and increaſed by them; it appears how difficult and impracticable its cure muſt ſometimes be. It appears alſo,

when its cure is not impoſſible, how various it ought to be, both when the complaint proceeds from a cauſe ſituate within the ſkull, as well as from one without it *."

* *Epiſt. Anat. Med.* ix. n. 26.

292. Hence our moſt ſkilful phyſicians confide more in thoſe remedies which produce a change over the whole ſyſtem, than in noſtrums and ſpecifics. For in this manner they hope to be able gradually to deſtroy that condition of the brain, whatever it is, which may be conſidered as an exciting cauſe, or to correct the remote cauſes, which generally proceed from abundance, or dyſcraſy of the fluids, in ſuch a manner that thoſe which excite diſeaſes may become incapable of acting. They therefore endeavour occaſionally to diminiſh the quantity of blood when plethora happens to be preſent; to remove the bad condition of the fluids, when the ſymptoms denote it, by evacuants; to blunt the acrimony by diluents, cooling things, and ſheathers; in one word, to reſtore every thing to a due balance and equilibrium. With which view they preſcribe veneſection at ſtated periods, not omitting occaſional purging. They employ diuretics and ſudorifics, and particularly whey, the juices or infuſions of ſuccory, fumitory, and baum, the decoctions of bark-root, that of ſarſaparilla, and ſometimes of guaiac, aſſes milk, and medicated waters, continuing their uſe for a long time, the freſh-water bath, viper-ſoup, that

of frogs and eels, as occaſion may ſerve. But they place their chief reliance, as the moſt ancient phyſicians formerly did, on the employment of a proper diet. For by means of it a bland condition may be imparted to the fluids, in conſequence of which neither the brain nor nerves are in any way vellicated or ſeverely affected. They therefore principally recommend change of air, travelling, exerciſe, the due regulation of the ſleep, tranquillity of mind, and the employment of digeſtible and bland articles of diet. They preſcribe total abſtinence from wine, by which means alone many are ſaid to have been freed from epilepſy. They adviſe avoiding too full eating of every kind, and forbid the uſe of hard, difficultly digeſtible, ſalt, or acrid food, or that which in any way quickens the motion of the blood. The drinking of coffee, as being inimical to the nerves, ſhould be avoided. Salom. Theoph. Meza once obſerved a fatal epilepſy occaſioned by the drinking a very ſtrong decoction of it*. The drinking of water, milk diet, and purity of the air alone, have ſometimes reſtored the health. But in children and young people much benefit may be expected from their advancing in life. Enough, then, of epilepſy †.

* *Collect. Soc. Med. Haunienſ.* vol. i. p. 154.

† I have ſaid as much concerning this diſeaſe as the nature of this work allows; though others may think that enough has not been ſaid. To ſuch perſons I ſhould recommend a moſt

complete treatiſe on the ſubject, entitled *Traité de l'Epilepſie, par* M. Tiſſot, *Doct. Med.* &c. in 8vo, a Paris, 1772. The ſtudent cannot make himſelf too well acquainted with this very excellent work, in which he will find explained in the fulleſt manner every thing relating to the hiſtory, cauſes, ſymptoms, and method of cure of this diſeaſe.

CHAPTER IX.

OF VERTIGO.

293. VERTIGO, by the Greeks named *Dinos*, is by us conſidered as that affection in which a perſon thinks his head is ſuddenly turning round, or that the external objects, although in fact quieſcent, are ſuddenly thrown into a circulatory motion, or in which both ſeem to take place, ſenſe and voluntary motion being in ſome meaſure deranged, and the body becoming unſteady. By this deſcription, I believe, is immediately perceived what is underſtood by this name; nor am I at all anxious about the point which is diſputed by noſologiſts, namely, whether it ought to be referred to the diminiſhed or increaſed motions *. In it I have comprehended, not only the ſudden apparent rotatory or tremulous motion of the ſurrounding objects, but I have likewiſe added the

fallacious ſenſation with which the patient is affected, as if he were about falling down; becauſe, when a perſon is ſeized with the complaint, even with his eyes cloſed, or if he happens to be blind, he appears to himſelf to be turning round. I have obſerved alſo, that the ſenſes are ſomewhat deranged; becauſe, as Sauvages properly remarks, in this diſeaſe not only do the ſight or hearing, but alſo the touch and internal ſenſes, become morbidly affected.

* Some authors claſs vertigo among the diſeaſes of impaired motions. Ludwig, in particular, refers it to the comatoſe affections; nor does Platner differ from him. They both define this affection to be *the ſudden derangement or obſcuration of the ſenſes, which is particularly remarkable in the organs of ſight and hearing.* But this definition does not convey a ſufficiently clear idea of vertigo, nor does it directly point out what vertigo has in common with the comatoſe affections, entitling it to rank with the latter. Sauvages, again, thought proper to refer vertigo to the claſs of the *veſaniæ*, and particularly to the order of the *hallucinationes*. For, according to him, vertigo is a *hallucination, in conſequence of which the ſurrounding objects, although at reſt, appear to the patient to be in motion, or turning round.* But if the word *hallucination* is applicable to the mind, I do not ſee why vertigo ſhould be placed among the hallucinations, as the perſons ſeized with it know very well that the rotatory motion is not real, but only apparent; nor do they in this reſpect form a falſe judgment, making it referable to the mental illuſions. But it may be ſaid, that they do not err in point of judgment, but in imagination, or rather in ſenſation. Whatever, in ſhort, be the nature of their illuſion, it is ſuch as the mind immediately diſcovers, and therefore cannot be ranked among the veſaniæ and hallucinations. Add to this, that the patient's ſtaggering,

and being afraid of falling, together with the obſcuration of the ſight, tinnitus aurium, and other ſymptoms which frequently occur in vertigo, are not errors of fancy and mental hallucinations, but actual complaints, as I ſhall afterwards make appear more plainly. Be this as it may, I do not trouble myſelf much concerning the arrangement of diſeaſes into claſſes. I only conſidered it as proper to treat of vertigo after epilepſy, on account of the former appearing to be a very ſlight degree of the latter, and having ſome affinity to it.

294. Three particular varieties of vertigo are generally eſtabliſhed. The firſt is *ſimple vertigo*; which takes place, as I have already obſerved, when the external objects, or the patient's body only ſeem to turn round and totter. The ſecond takes place, when, in addition to the apparent rotation or agitation of the ſurrounding objects, likewiſe the ſight becomes obſcured or defective, or at leaſt when the things which ſeem to be in motion appear of a dark colour, or, laſtly, when the eyes, after various colours have been ſeen before them, are overſpread with darkneſs. This ſpecies goes under the particular denominations of *ſcotodinia*, *ſcotomania*, or *vertigo tenebricoſa* *. Laſtly, the third occurs when the vertigo riſes to ſuch a height that the patient is obliged to lay hold of whatever is in his way, to prevent tumbling down. It is named, therefore, *vertigo caduca*, and is conſidered as being very nearly allied to epilepſy. Nay, this laſt degree of the

complaint is conſidered by ſome as a ſlight epilepſy, in the ſame manner as a very ſlight attack of epilepſy is conſidered in the light of a vertigo. Hence we may infer, that in vertigo the eyes are not always affected, and that when they are, they alone do not labour under the complaint, but the brain and other parts alſo, particularly the muſcles which ſupport the body; and, therefore, that the ſtaggering of the body, which is ſometimes ſo great as to cauſe the patient to fall down, is not always to be derived from the obſcuring of the ſight, and the fear of falling down ariſing from it, as a perſon might be apt to ſuppoſe. Moreover, in this diſeaſe, the other ſenſes alſo are very frequently ſomewhat affected; for the idea of the turning round of the body, or external objects, is generally accompanied with tinnitus aurium, or dulneſs of the hearing, and an imperfect ſenſe of touch.

* *Scotodinia*, *ſcotodinos*, and *ſcotomania*, are ſynonymous terms. Σκότος, *tenebræ*, and δίνη, *vortex aquarum*, explain the origin and ſignification of the term. Σκότωμα, *caligo*, *obſcuritas*; hence *ſcotomania*.

295. A variety of theories concerning the proximate cauſe of vertigo have been brought forward by pathologiſts; but, in my opinion, the ſubject ſtill remains in its former obſcurity *. Nor has Gaubius diſſipated the darkneſs in which it is involved, by his obſervations. He obſerves: "In the ſame manner as the viewing of objects

which are turning round, or otherwiſe thrown into rapid motion before our eyes, as well as the turning round of the head and whole body, and looking down a ſtupendous precipice, occaſion vertigo in people unaccuſtomed to them; it is probable that the internal cauſes alſo act in a manner not diſſimilar*." But it ſtill remains to be explained in what this conſiſts. For as we do not know what happens to the nerves and medulla of the brain in our ſenſations and perceptions, properly ſo called; we are equally ignorant of the change which takes place in the brain, retina, and nerves, of the other ſenſes, from the external cauſes juſt mentioned, which occaſion vertigo in thoſe who are unaccuſtomed to them. At moſt it may be conjectured, that in vertigo, ſometimes the cryſtalline lens, from ſome unknown cauſe, is rendered oblique, inclined, or irregularly agitated, ſometimes that the ball of the eye, in conſequence of its muſcles being irregularly and ſpaſmodically contracted, undergoes ſome change of its figure and poſition, ſometimes that the retina, optic nerve, brain itſelf, and the nerves ſubſervient to hearing, touch, and motion, are affected in the ſame manner as in the ſpaſmodic and convulſive diſeaſes. For if the particular phenomena attending vertigo be conſidered, and the cauſes exciting it are thoroughly examined, ſcarcely any thing will be found which

does not indicate a nervous and convulſive affection.

* For the ſpeculations of ancient pathologiſts concerning the proximate cauſe of vertigo are ſo improbable and fanciful as to deſerve no kind of credit. Thus in the preſent advanced ſtate of our knowledge of phyſiology and anatomy, who could be ſatisfied with being told that the proximate cauſe of the complaint is a *ſpiritus flatuoſus*, or the *fluids converted into vapour by heat*, or *ataxy of the ſpirits*, or the *paſſages of the animal ſpirits having become diſtorted*, or a *motus ſaltatorius* of the animal ſpirits in the eye? Who can conceive the idea of the animal ſpirits in the brain or orbit of the eye being thrown into a circulatory motion, while, if in fact they exiſt at all, it is altogether rational to ſuppoſe that they are contained in their proper tubes, and moved in them according to the laws of other fluids? Who can aſſent to the hypotheſis of Juncker, which ſuppoſes the nerves to proceed from the membranes of the brain, and motion and ſenſe to be derived from tenſion of the membranes and nerves, in order to afford ſome explication of vertigo, by aſcribing it to a ſpaſmodic tenſion of theſe? Nor is Sauvages' hypotheſis, although more highly finiſhed, involved in leſs difficulty: for it ſuppoſes that a retrograde motion of the blood takes place in the retina, in the ears, and in the organs of touch. Certainly no one can deny, that from the intervention of certain cauſes the blood may regurgitate from the veins to the ſmall arteries, and thence into the larger branches. But who will ever be able to demonſtrate that this is really the proximate cauſe of vertigo? This intirely reſts on hypotheſis only; nor does it deſerve more credit than the other groundleſs opinions which have been ſtarted. For whoever ſhould aſſert that the ciliary circle is contracted, and the cryſtalline lens therefore rendered oblique, or that the muſcles of the eye are irregularly ſtretched, in order to explain the circulatory motion and irregular agitation of the ſurrounding objects, would point out no other cauſe of vertigo but ſpaſm and con-

vulſions of theſe parts. But who to a certainty can affirm that the ciliary circle is poſſeſſed of irritability, and therefore of contractility? And even if it did poſſeſs it, that by means of its contraction it could render the cryſtalline lens oblique, and pervert the optical axis?

† *Inſtit. Pathol. Medic.* § 721.

296. All thoſe things which compreſs, agitate, irritate, and weaken theſe parts (295.), whether they act immediately upon them, or by conſent, may be conſidered in the light of remote cauſes of vertigo. To this place, therefore, may be transferred all thoſe things which were enumerated under the name of *remote cauſes* when I treated of the convulſive affections, and particularly of epilepſy. The chief of them are, old age, the winter-ſeaſon, rainy weather, blows on the head, fractures or depreſſions of the ſkull, expoſure to a ſcorching ſun, exceſſive exerciſe, ſitting in the fore-part of a coach, exceſſive eating, flatulent food, a fit of anger, the bath, immoderate excretions, the ſuppreſſion of a uſual evacuation, faſting, particularly in bilious habits, the fumes of quickſilver, the effluvia ariſing from charcoal, from ditches, and fermenting wine or beer, aſſailing people of a ſenſible habit, cold feet, the unuſual or immoderate employment of wine, various liquors, tobacco, opium, darnel, and other narcotic ſubſtances; of which ſome act, as appears, immediately upon the brain itſelf,

others upon other parts; in ſuch a manner, however, that the brain is affected by conſent, or too great a determination of fluids takes place to the head. Among the parts by conſent with which the head is affected, the chief is the ſtomach, in which, moſt frequently, the cauſe of vertigo is contained. For, either in conſequence of its being empty, or abounding with acrid and vitiated fluids, by which irritation is produced, or overloaded, vertigo is often excited, which however immediately ceaſes, either on food being taken moderately, or in conſequence of the ſordes and acrid fluids which are in it being expelled, or on its being freed from the load with which it is oppreſſed. Hence it appears why hypochondriacal patients are ſo frequently liable to vertigo. For in ſuch perſons the *primæ viæ* generally abound with crudities and vitiated fluids; the ſtomach and inteſtines are diſtended with flatus; the circulation of the blood proceeds languidly in the abdominal viſcera, and particularly in the vena portarum; hence ſpaſms, and an unequal diſtribution of the blood; hence too great a determination of the fluids to the head, or the irritation, which is readily propagated to the brain by conſent with the par vagum nervorum.

297. Beſides theſe differences which I have already mentioned (294.) as proceeding from the greater or leſſer degree of the complaint, I muſt not neglect another proceeding from the ſeat of

its origin ,and which is in common to it with moſt other diſeaſes, namely, the diviſion into idiopathic and ſympathic vertigo. It is again divided by ſome into *vertigo of the brain*, *vertigo of the ſight*, and *vertigo of the ſenſe of touch*, and ſo forth. According to the variety of the cauſes, like other diſeaſes of the head in particular, it aſſumes various names, which are derived from the blood, from ſerum, from wounds, blows, poiſons, from intoxication, from the ſtomach, hypochondres, and uterus, from exceſſive ſenſibility, from inanition of the veſſels, &c. of each of which it is unneceſſary to make particular mention. It is alſo ſometimes combined with other diſeaſes, or is a ſymptom of them. Hence it is denominated *complicated*, or *ſymptomatic*.

298. The diſeaſe is readily diſcovered from the ſymptoms already enumerated. Nor can its cauſes remain hidden, if we attend to the marks of them which have ſo often been laid down. Omitting theſe, therefore, I ſhall paſs to the prognoſis. Vertigo is more or leſs ſevere, according to its degree. The ſpecies named *tenebricoſa*, and that named *caduca*, is attended with greater danger than that which is ſimple, as alſo the idiopathic than the ſympathic; but the leaſt dangerous of them all is, the *hypochondriacal* or *hyſterical* ſpecies. But the danger in the more violent complaint, which attacks the patient without any manifeſt cauſe, ariſes from the circumſtance that

young men labouring under it are apt to fall into epilepsy, while those who are farther advanced in life, or arrived at old age, are apt to be attacked with apoplexy. A headach coming on in vertigo occasionally resolves the complaint. But, on the other hand, a vertigo supervening on a headach, denotes an unfavourable termination. Hence it has been observed by Hippocrates, "that the species of vertigo named *tenebricosa*, if it be attended with pains, terminates in madness, is difficultly removed, and chiefly hostile to old people *." Likewise the species which are combined with other diseases, or those which are symptomatic, are considered as being bad, as we discover from the prognostics of Hippocrates. "A person labouring under the *vertigo tenebricosa*, and impatience of light, accompanied with sleep and great heat, is fast approaching his death †. Small tumours of the ears in chronic diseases, if an epistaxis occasionally occur, and a *vertigo tenebricosa* come on, prove fatal ‡. Fevers accompanied with vertigo, together with an affection of the small intestines, or without it, threaten death ‖." But when vertigo comes on at the beginning of the disease, it frequently is the forerunner of an epistaxis, or vomiting. Hence in the *Coacæ Prænotiones* it is observed: "The *vertigo tenebricosa*, when occurring about the beginning of diseases, is resolved by an epistaxis coming on §." And elsewhere it is said: "If a

patient labouring under a fever which is not fatal, mention that his head is pained, and that his ſight is obſcured; and if at the ſame time a gnawing ſenſation be felt at the cardia, it is a proof that a bilious vomiting will come on ¶.

* *Prædict.* l. 2. n. 155. † Hippocrat. aph. 15. ſect. viii. ‡ *Coac.* n. 105. ‖ *Ib.* n. 106. § N. 341. ¶ N. 144.

299. Moreover, the cure of the complaint, according to the variety of the cauſes, is to be collected from the former chapter, upon the Convulſive Affections, and particularly from what has been ſaid of the treatment of epilepſy. Peacock's dung and wild valerian-root are conſidered as ſpecifics. Among the cathartics the moſt efficacious are ſaid to be, the *pilulæ de ſuccino Cratonis*, and maſtichina. In the vertigo proceeding from the motion of a carriage or ſhip, Gorter recommends paregorics and agreeable acids, as theriac, and Rheniſh wine, with citron or lemon juice, and a little of the ſyrup of diacodium *. Others propoſe wine mixed with ſea-water, to prevent the vertigo, which generally diſtreſſes people, unaccuſtomed to the motion of a veſſel, during a ſea-voyage. With regard to the diet, it ought to be calculated to correct the morbific cauſes.

* *Diſſert. de Vertig.* § xxxiv.

CHAPTER X.

OF OPHTHALMIA, AND OTHER DISEASES OF THE EYE.

300. THE eyes are liable to a variety of ſerious complaints, many of which are treated of in works upon ſurgery. But, omitting thoſe which are cured by operations alone, I ſhall give a ſhort account of ophthalmia, and ſome other complaints of the eye, which frequently require the phyſician's aid. The name *ophthalmia* has a more extenſive ſignification; and although ſome conſider it as equivalent to *oculorum morbus* *, the old practice has ſtill prevailed, and it is generally employed to denote the inflammation of the coats of the eye, particularly thoſe externally ſituate. Some of the moderns prefer naming it *ophthalmitis*.

* Ὀφθαλμὸς, *oculus*; therefore Ὀφθαλμια is the ſame as *oculorum morbus*. Celſus names it *lippitudo*. Sauvages divides it into ſeveral ſpecies, ſome accompanied with redneſs and pain, but without inflammation, and others accompanied with inflammation. When I mention the word *ophthalmia*, adhering to its ancient ſignification, I mean nothing elſe than inflammation of the eyes. For I am not diſpoſed to change the ancient names merely from caprice.

301. Ophthalmia, as I have already ſaid, is divided into three degrees or ſpecies, if we follow

the common diviſion employed by authors. The firſt degree is named *taraxis*, ſignifying, as it were, *turbatio*, from Ταρασσω, *turbo*. It occurs when a ſlight degree of redneſs or inflammation betrays itſelf in the tunica adnata or conjunctiva. In it the eye is more moiſt, ſlightly warm, and red, and begins to be ſomewhat painful. And that generally happens from evident cauſes, the ſcorching heat of the ſun, fire, ſmoke, wind, duſt, drinking wine, and the like. But ſo ſlight is that inflammation, that Galen conſidered taraxis rather as the beginning of inflammation than real inflammation. Hence ſeveral, both of the ancients and moderns, among whom are Piſo * and Juncker †, have named it *ſpurious ophthalmia*. The ſecond degree is conſtituted by ophthalmia, properly ſo called, in which more manifeſt inflammation appears, the eyes are redder, hotter, and more painful, and are not only moiſt, but pour forth tears abundantly; and, moreover, the cauſes which have given origin to the diſeaſe are generally more ſevere. Laſtly, the third degree is ſaid to be preſent, when not only the adnata, but alſo the ſclerotica, become ſo ſwelled from inflammation, as to be raiſed above the cornea, leaving, as it were, an hiatus in it. Moreover, in this ſpecies of inflammation of the eye, the eyelids are generally turned in, and a ſevere headach and watching come on. It is named *chemoſis*, from Χαίμη, *hiatus*. I cannot help wondering

that Juncker ſuppoſed that this more ſevere degree of ophthalmia could ariſe from the ſerous fluid, and therefore referred it to the *ſpurious ophthalmia.*

* *De Morb. Cogn. et Cur.* l. 1. c. 26. n. 40. † *Conſpect. Med. Theor. Pract.* Tab. xxiv.

302. Others expreſs theſe degrees or varieties of ophthalmia (301.) in a different mann; they name the firſt *ophthalmia levis;* the ſecond *gravis;* and the third *graviſſima.* And there are ſome, who, by the name *chemoſis*, underſtand particularly that inflammation of the eyes which extends to the internal membranes of the eye, and the contained fluids. Thoſe who do not take it in that, but in the former acceptation, are obliged to beſtow another name upon the inflammation which affects the internal parts of the eye, namely, the choroid coat, the uvia, retina, and capſule of the cryſtalline or vitreous humour. Hence Platner has named it in particular *phlegmon* of the eyes. It is attended with the moſt ſevere ſymptoms, namely, intolerable pain and heat of the head and eyes, violent fever, watching, ſometimes delirium, impatience of light, or total averſion of it, contracted pupil, and a copious diſcharge of tears. This violent inflammation of nearly the whole eye, particularly when it originates from a ſudden cauſe, generally attacks the eyes with ſuch violence that it appears, as it were, to force them

from their ſockets. On account of the protuberance of the ball, the eye being dependent, it is named by the Greeks, as Celſus tells us, Προπτωσις †. In this very ſevere ſpecies of the complaint, when the retina is affected, Pitcairn thinks that this appears from the muſcæ volitantes, duſt, and other imaginary appearances, and ſpots floating before the eyes ‡. But Porterfield, in oppoſition to the opinion of Pitcairn, contends that theſe very appearances may alſo take place in conſequence of alterations and faulty conditions of the aqueous humour.

* *Inſtit. Chirurg.* § 281. † L. vi. c. 6. n. 8. ‡ *Elem. Medic. Phyſic. Mathemat.* c. xiii. § 2. 3. 4.

303. Theſe obſervations apply to the *genuine* and *ſanguineous ophthalmia*, which ſome name likewiſe *humida*, from the quantity of tears. I now paſs to that which is commonly named *ophthalmia notha*, and *ſicca*. It is named ſpurious, in the firſt place, becauſe the eye-lids and their angles are affected rather than the ball of the eye, and, next, on account of its being occaſioned by acrid ſerum or lymph; and it is called dry, on account of its being accompanied with leſs watering. Of this laſt, two occur, one attended with itching, and the other without it. That which is accompanied with itching, is either attended with a ſlight diſcharge of ſalt and acrid humour, and is named *pſorophthalmia*; or in it there is no kind of diſcharge of fluid, but the eye-lids are only red, and affected with

ſlight pain, and a ſenſe of weight; and then it is named *xerophthalmia*, or *lippitudo ſicca*. But that kind of the diſeaſe which is unaccompanied with itching, and is occaſioned almoſt merely by hardneſs of the eye-lids, is commonly named *ſclerophthalmia*, or *lippitudo dura*. All theſe ſpecies of ſpurious ophthalmia proceed from the lymph, which ought to moiſten and lubricate the eye-lids, having acquired an acrid or ſalt diſpoſition, and become viſcid and tenacious: they are therefore named *lymphatic* or *ſerous*. But as the courſe of the genuine and ſanguine ophthalmia is ſhort and acute, ſo that of the ſpurious ſpecies is of longer continuance, in which circumſtance, independently of the other ſymptoms which I have mentioned, they principally differ from one another.

304. Hence it appears what the proximate cauſe of theſe affections is; namely, genuine or ſpurious inflammation in any way affecting the eyes. But the remote cauſes are either thoſe in common to other inflammations, which I have already enumerated in the treatiſe on inflammation; or they are peculiar to the complaint, as a bad ſtate of the blood, the febrile matter being carried to the eyes, the variolous, ſcorbutic, ſtrumous, and venereal acrimonies, or that of itch; wounds, blows, the heat of the ſun, wind, ſmoke, acrid bodies falling into the eye, and certain ſeaſons of the year, as Hippocrates

has obſerved, when he ſays: "If the winter be dry and cold, and the ſpring rainy and hot, acute fevers, ophthalmia, and dyſentery neceſſarily ariſe in the ſummer-time, particularly apt to attack women, and men of a moiſt habit of body *. But if the winter be warm and rainy, and the ſpring dry and cold, ophthalmia ſicca takes place †."

* Aph. xi. ſect. iii. † Aph. 12. ſect. iii.

305. According to the difference of the nature and degree of violence of the inflammation, and according to the variety of the cauſes, manifold diſtinctions of ophthalmia ariſe, which are partly already noticed, and are partly ſelf-apparent, particularly when the cauſes are conſidered, and the adjunct added, as *ophthalmia magna*, *parva*, *acuta*, and *lenta*, or that which is *primary*, *ſecondary*, *ſymptomatic*, *ſyphilitic*, *ſcorbutic*, *ſcrofulous*, &c. Nor is it a difficult matter to diſtinguiſh theſe varieties by attending to the ſymptoms already enumerated, and a review of preceding circumſtances. It is of great conſequence, however, to inquire whether the diſeaſe ariſes merely from an external and evident cauſe, or any morbid condition of the blood has preceded its appearance, which may be eaſily learnt from the patient or his friends. Next, whether the inflammation affects merely the external parts of the eye, or the internal parts alſo. If the firſt is the caſe, the pain, pulſation, and ſwelling, are generally

propagated to the neighbouring parts: if otherwiſe, all theſe ſymptoms are more ſeverely and more deeply felt. Nay, ſometimes a particular itching is excited in the noſtrils and palate, which is ſucceeded by frequent ſneezing, in addition to all thoſe ſymptoms which I have already enumerated in the deſcription of every ſpecies or degree of the complaint. And becauſe theſe complaints, like other diſeaſes, go through certain periods, our attention ought to be carefully directed to theſe, particularly to the tears. For, when the eyes begin to grow red, and diſcharge an abundance of thin fluid, it is commonly conſidered as the commencement of the complaint; when all the ſymptoms are aggravated, the *increaſe* of the complaint is ſaid to take place; and its *height* comes on when the humour diſcharged becomes more bland and thicker, ſo as to be apt to glue the eye-lids together; and, laſtly, the *declination* commences when all the ſymptoms remit and diſappear.

306. Sennert mentions* that the ſpecies of ophthalmia which approaches to that named *taraxis*, is more eaſily cured than that which comes nearer to the *chemoſis*. For the chemoſis, as well as the internal ophthalmia, which, as I have already ſaid, has been named by Platner *phlegmon* (302.), is not only difficult of cure, but alſo threatens ſuppuration and gangrene, or, in conſequence of a cataract, ſtaphyloma, or amauroſis being induced,

the total loſs of ſight. That which ſupervenes after wounds and contuſions in the head is attended with moſt danger, as indicating inflammation of the brain and its membranes, and portending death. In general, that which proceeds from a morbid condition of the internal parts of the head is more ſevere and dangerous than that which is occaſioned by an idiopathic affection of the eye. Moreover, if the pain continue long, and yield to no remedies, it affords a very bad ſymptom; for it ſeems to proceed from a cauſe which cannot be reſolved, or which is of a corroſive kind, or has a rapid tendency to ſuppuration, in conſequence of which the veſſels and coats of the eye may be either burſt, or eaten through, or ulcerated, particularly the cornea lucida; or congeſtions and indurations may take place internally, occaſioning the effuſion and breaking out of the humours, or giving riſe to hypopyum, and other complaints, or actual blindneſs. Sometimes ophthalmia is of very frequent recurrence, particularly when remarkable viciſſitudes of the weather happen. Frequently the inflammation paſſes from one eye to the other, which muſt be attended to in order that it may be as far as poſſible prevented. Inſtances are likewiſe recorded which have induced ſome to ſuppoſe, that ophthalmia is ſometimes propagated by contagion, which equally requires being at-

tended to, that we may endeavour to diſcover and prevent its cauſe. Likewiſe chronic ophthalmia, particularly the ſcrofulous, ſcorbutic, and venereal kind, occaſion great inconvenience, for they are all of them cured with the greateſt difficulty. The venereal ſpecies, particularly if it proceed from the imprudent ſuppreſſion of gonorrhœa virulenta, unleſs a very efficacious method of cure be adopted, increaſes with great rapidity, deſtroying the ball of the eye, and very quickly occaſioning blindneſs. Likewiſe the ophthalmia which ſupervenes when lues venerea is preſent, although it does not proceed to blindneſs ſo rapidly, is attended with much danger, and proves no leſs obſtinate and formidable. The ſpurious and œdematous ſpecies are attended with leſs danger, but are more tedious and obſtinate. Hippocrates has obſerved: "That it is a good ſign when a perſon labouring under ophthalmia is attacked with a looſeneſs †." In the *Coacæ Prænotiones*, again, it is obſerved: "When a perſon labours under ophthalmia, the complaint is reſolved by fever ſupervening: if it do not produce this effect, however, blindneſs or death are to be apprehended ‡." When a headach comes on in ophthalmia, and continues long, there is reaſon to ſuſpect that blindneſs will follow ‖.

* *Med. Pract.* T. 1. *oper.* T. 2. l. 1. P. 2. ſect. 2. c. xii. p. 270. † *Aphor.* 17. ſect. vi. *et Coac.* N. 224. ‡ N. 222. ‖ N. 223.

307. The indications in every ſpecies of ophthalmia are the ſame as in other inflammations, namely, to prevent too great a determination of blood to the eyes, to rĕſolve the ſtagnant humours, and to allay and correct their acrimony. Nor are they to be otherwiſe fulfilled than by thoſe very remedies which were elſewhere propoſed for the cure of inflammation in general; only keeping in view the cauſes from which the diſeaſe proceeds, and the part affected. But there are ſeveral things to be obſerved in the treatment of ophthalmia which are to be conſidered as in a manner peculiar to it. Firſt, it is neceſſary to keep the patient quiet, and in a dark place, completely excluding the light, to prevent the exerciſe of the eye-ſight. Nor is it proper to bind up the eyes when affected with ophthalmia, particularly if an acrid or thick humour is diſcharged. For there is a riſk of the humour which ought to have been diſcharged, in conſequence of being retained, occaſioning ulceration of the palbebræ and cornea, or of the palbebræ becoming glued together, or to the eye, inconſequence of a cicatrix being formed; which diſeaſe is named *ancyloblepharum*, and is to be removed by ſurgery alone *. Sometimes, however, it may be ſerviceable, eſpecially after a ſurgical operation, to bind the eye, which ought to be done likewiſe to the ſound eye, that that

which is affected may not be thrown into action, and receive injury from the motion of the other. The inflamed eye must likewise be secured against the air, and all the causes or medicines which are apt to excite a flow of tears carefully avoided.

* Concerning this operation the reader may consult Platner, *Instit. Chir. Rat.* § 331. and the works of other writers on surgery.

308. The slightest degree of ophthalmia, or that named *taraxis*, is frequently cured merely by rest and excluding the light, or by the extraction of any foreign body which may have insinuated itself between the eye and the palpebræ. Sometimes, however, if plethora be present, or a bad state of the fluids, bleeding, purging, and other remedies, opposed to the faulty condition of the blood, become requisite. Occasionally at the very beginning it is serviceable, if the cause of the complaint be relaxation of the vessels, or thinness and heat of the blood, to foment the eye with a rag dipped in cold water, or with the white of an egg beat up with the water of white roses, or with water mixed with a little vinegar, the eyelids being closed. On the other hand, if plethora and density of the blood, if irritation and tension of the vessels, have occasioned the complaint, or if the disease have been of considerable duration, we must abstain, with the utmost caution, from cold and repressing remedies. For by means of them

the taraxis is eaſily converted into phlegmon, which Platner obſerved to happen in conſequence of an empiric having raſhly employed cold water *. It is then better to employ tepid water, women's milk, a decoction of the ſeeds of flea-wort, barley-water, and the like, in order to aſſuage the irritation, pain, and ſpaſm. It may be underſtood that cold and repreſſing remedies are admiſſible, if the redneſs of the eyes be accompanied with hardly any pain and heat; for in the caſe of laxity of the veſſels, and thinneſs of the blood, both of them are generally abſent. But when the pain and irritation requires aſſuaging, ſedative, and emollient remedies, it is attended with the greateſt advantage to apply to the eyes, with the eye-lids ſhut, the pulp of ſweet apples roaſted and beat up with milk, ſo as to form a very ſoft poultice. If the complaint proceed from an internal cauſe, Platner † recommends the common collyrium of prepared tutty, and a little calcined vitriol, rubbed together, with ſome fennel or roſe water. But all thoſe remedies which are apt to irritate the eye ought to be omitted in this diſeaſe, particularly ſaline things or ſtyptics: for beſides the irritation by which the complaint is aggravated, they may occaſion opacity of the humours. For, in conſequence of the late experiments of the ingenious Michael Troja, ſurgeon in ordinary to Ferdinand King of Sicily,

it has been aſcertained, that from the application of ſaline or acid remedies to the eye, the cryſtalline lens, or its coat, loſes its pellucidity, on account of which an artificial cataract is induced. We muſt not, therefore, be over ready in the employment of ſaline or metallic remedies, although in very common uſe. If the diſeaſe proceed from the inclemency of the weather, or from the perſpiration being checked, or from catarrh, a gentle flow of the ſweat ought to be promoted in the morning. It is neceſſary to attend to this, leſt aſtringents, as alum, ſugar of lead, and its extract, tutty, and the like, be raſhly employed; and, if it ever be done, it ought to be practiſed with the utmoſt caution when the diſeaſe is beginning, or has already begun, to take a favourable turn. They require the ſame caution which I have preſcribed in the employment of cold applications. And it is proper to obſerve the ſame limitation in the other ſpecies of ophthalmia.

* *Inſtit. Chir. Rat.* § 286. † *Ibid.* § 291.

309. In ophthalmia properly ſo called, as alſo in chemoſis (301.), and ſtill more in phlegmon (302.), bleeding,—according to the maxim of Hippocrates, "that ophthalmia is removed by veneſection *,"—is abſolutely neceſſary. It therefore becomes neceſſary immediately to draw blood from the veins of the arm, or foot, from the jugulars, nay, from the temporal artery itſelf, repeating it according to the degree of violence of

the diſeaſe, and the patient's ſtrength; to fix cupping-glaſſes upon the back, neck, and behind the ears; to apply leeches to the temples and about the os petroſum; to produce pretty briſk purging by means of antiphlogiſtic remedies, and frequently to immerſe the feet in hot water. But if little advantage be derived from theſe remedies, and the veſſels in the adnata appear large and turgid, they ought to be raiſed by means of a crooked needle paſſed under them, and divided with a proper lancet, in order that they may pour out as much blood as poſſible, the eye in the mean time being fomented with tepid water, that the blood may flow out the more readily. When the adnata itſelf becomes ſo much ſwelled as to choak up the eye, as it were, by its compreſſion, where it inveſts the inner ſurface of the lower palpebra, it ſhould be deeply ſcarified, in order that a detumeſcence of it may be occaſioned by a diſcharge of blood. Thus the ſuffocation of the eye is prevented, and the riſk of occaſioning ſtaphyloma of the ſclerotica, by the cutting of the adnata, which covers the eye, is avoided. Nay, if even thus it do not ſubſide, and there be occaſion for a more efficacious remedy, the beſt ſurgeons adviſe the cutting of it out to as great extent as poſſible; and this operation is chiefly admiſſible in the ophthalmia proceeding from gonorrhœa and ſevere ſyphilis (305. 306.). It is

affirmed that much benefit is derived from the application of two leeches to the lower part of the orbit, near the external angle of the eye, care being taken to allow the blood to continue flowing for ſome hours after the leeches have fallen off †.

* *Epid.* l. vii. † *Comment. Lipſ.* vol. ii. p. 400.

310. When the complaint proves obſtinate, and when the patient's habit of body is full, or the fluids bad conditioned, after the general evacuations having been employed, we muſt quickly have recourſe to cantharides and the cautery. The former are applied to the nape of the neck, behind the ears, or between the ſhoulders, to occaſion ulceration. Nay, ſome adviſe their application to the temples or forehead, if an uneaſy heavineſs be felt there. The latter are burnt in under the occiput. The moſt powerful kind of cautery is a ſeton inſerted in the back-part of the neck. This draws off a great quantity of humours, and occaſions a more extenſive ſuppuration; and therefore, as it is more uneaſy to bear, it ſeems more efficacious in occaſioning revulſion. It is very frequently employed in the neighbourhood of Milan; nor are they content with a ſlight one; for they generally extend it as far as three or four inches. There is ſcarcely any ſevere diſeaſe of the eyes or head in which they have not recourſe to this ſurgical operation. In conſequence of this indiſcriminate practice, it cannot but happen that it is ſometimes employed unne-

ceſſarily, ſometimes without effect, and not always without injury. A ſkilful and bold oculiſt mentioned to me candidly, that after having made a good many trials of it, without being attended with much ſucceſs, he had almoſt intirely laid aſide this practice. On the other hand, another of not leſs experience and ſkill aſſured me, that if any hopes of a cure remain in ſevere and chronic diſeaſes of the eyes, or in thoſe which are apt to return, they reſt intirely upon the employment of a ſeton, as he had often aſcertained from his experience. From which facts we may collect, that a ſeton, like other conſiderable remedies, unleſs it be employed with caution, is neither a certain nor an harmleſs remedy in ſuch diſeaſes. The ſpecies of ſeton which is formed in the lobe of the ear is milder and ſafer. When it is neceſſary to derive the humours from the eyes more powerfully, after the third day of perforating the lobe of the ear, the fibres of ſpurge-laurel and black helebore are inſerted, and renewed every day. For in this manner the hole is irritated, ſo as to ſuppurate and diſcharge much humour. Cauteries are not only uſed in the parts already mentioned, but are likewiſe attended with advantage in the arms, and contribute greatly to overcome or prevent the recurrence of chronic ophthalmia. It is particularly ſerviceable in the caſe of recurrent ophthalmia, which is kept up by a peculiar acrimony of the fluids, as that of

ſmall-pox, gout, herpes, itch, and the like. It is alſo attended with ſingular advantage to keep the belly open. Nay, in conſequence of purging it pretty briſkly, the blood is attracted copiouſly elſewhere, the ſwelling of the face ſubſides, and the red veſſels, which were too much diſtended, more readily contract and empty themſelves. This mode of purging the belly is frequently followed by a moſt complete cure.

* Van Swieten on Boerhaave, § 396.

311. We muſt at the ſame time obviate any peculiar dyſcraſy of the blood which may be preſent, by remedies calculated for the purpoſe. Exceſſive heat, and a phlogiſtic diatheſis of it, are oppoſed by whey, decoctions of the cooling and cold herbs, barley-water, and that of oats, with the addition of nitre, oxymel, and other antiphlogiſtic remedies, repeatedly mentioned, which may alſo be employed when the complaint proceeds from the variolous acrimony. A ſcorbutic taint is corrected by means of a vegetable diet, antiſcorbutic ſpecifics, whey, and milk, eſpecially goat and aſs milk; which laſt, if it be uſed in great quantity, and for a length of time, has a wonderful effect in blunting and correcting every kind of thin and ſubtile acrimony. Mercury, guaiac, and ſarſaparilla, poſſeſs the power of checking and expelling the venereal virus. But in the very violent ophthalmia occaſioned by the raſhly checking of a gonorrhœa, or by the venereal virus being carried to the eyes

(309.), the vigorous rubbing in of mercurial ointment effects a complete cure. The decoctions of the woods which are named *depurative* and *ſudorific*, in other morbid ſtates of the fluids, requiring being attenuated and reſolved, produce an excellent effect. Similar remedies are likewiſe ſerviceable when the diſeaſe is occaſioned by a ſtrumous virus. In that caſe, however, the following remedies are particularly recommended, æthiops antimoniatus, extract of hemlock, millipedes, the root of fig-wort, chalybeates, gentle cathartics, and ſo forth. Nor is bathing of the whole body, and the copious drinking of medicated waters, as being calculated for powerfully changing the intire ſyſtem, unattended with advantage in preventing the diſeaſe, employed according to the varieties of its cauſes. But when the diſeaſe at length goes off, the eyes may be ſtrengthened with proper collyria, among which the chief are, cold water, or that which is altered with ignited ſteel, or ſome eye-waſh, to which a little ſpirit of wine, or wine itſelf, has been added, applied rather to the eye when cloſed, than dropped into the eye itſelf. For thus imprudently irritating it might be apt to recall the complaint.

312. Nearly in the ſame manner muſt we treat the other caſes of ophthalmia. If there be any difference, it intirely depends upon the ſlighter degree of inflammation with which they are attended. But on its being at length diſcuſ-

ſed, the remainder of the cure is performed, partly by means of internal remedies, oppoſed to the peculiar dyſcraſy of the fluids, partly by external. In the pſorophthalmia, he itching and heat are allayed by mucilages, by the ſeeds of mallows, marſh-mallows, flea-wort, quinces, the water of the *ſperma ranarum*, and by a ſolution of gum-arabic, the eye-lids being frequently waſhed with them. In the ſclerophthalmia, after employing thoſe things which are calculated for removing inflammation, it is attended with the greateſt advantage to foment the eyes with warm emollient waters. When the diſeaſe is to be reſolved and diſcuſſed, it is neceſſary to add ſome camphor or ſaffron to the water of elder-flowers, fennel, eye-bright, and greater celandine, with which the eyes may be occaſionally moiſtened. Sometimes the exceſs of the pain abſolutely requires a doſe of opium. The *ſief album* of Rhaſes, which contains opium, is generally preferred to other remedies, and is rubbed up with theſe waters by way of a collyrium. It may frequently happen that in theſe ſpurious ophthalmiæ the margins of the eye-lids, and particularly the glands of Meibomius, may become affected, nay, even ſlightly ulcerated, and pour out pus, in conſequence of which the adnata alſo ſuffers ſomewhat. When that happens, the eye-lids grow red, ſwelled, painful, and itchy; and during ſleep are glued together,

and become ſurrounded with dry matter. That affection proves obſtinate; nor is it ever diſcuſſed, unleſs the ulcers of the margins of the eye-lids be well wiped and dried, and the glands recover their tone and ſtrength. In which caſe, for the complaint is at once diſcovered on inſpection, I cauſe the eyes and eye-lids to be very carefully waſhed and fomented ſeveral times a-day for two or three days with luke-warm barley-water, that all remains of the acrid humour and pus may the more readily paſs off, and that the irritation and heat may be as much as poſſible allayed. After which the vitriol of copper, diſſolved in a large quantity of water, ought to be applied to the eyes when ſhut, in ſuch a manner that the margins of the palpebræ may be wet, without the ball of the eye being touched, excepting very ſlightly *. But in proportion as the diſcharge of glutinous humour and the redneſs decreaſe, and the eye becomes more ſenſible upon the application of a remedy, we muſt gradually diminiſh the doſe of the vitriol, and employ it leſs frequently, until all the ulcers have healed up. For in this manner the ulcers are cleaned, become dry, and the relaxed parts are ſtrengthened. Others employ wine into which braſs has been poured, and occaſionally wet the eye-lids with it. Laſtly, if merely laxity of the veſſels and glands remain, then tutty, or the *coagulum*

aluminis, as it is called, are to be employed. In this manner have I frequently obſerved the moſt obſtinate caſes of ophthalmia very quickly removed. But if the ulcers, in conſequence of their continuance, have become foul and deep ſeated, ſome preſcribe the cautious application of the *lapis informalis*, or *lapis divinus*, or the *aqua viridis* of Haartman, and next recommend honey. But in the employment of corroſive and cauſtic remedies, care ought to be taken to prevent the eyes from receiving any injury, which is effected by immediately placing a cotton rag wet with cold water upon the margins and internal ſurface of the palpebræ, to be removed every five or ſix minutes.

* I generally employ this, or a ſimilar formula:

Rec. Vitrioli cyprii s. p. g. iv. ſolv. in aq. Euphraſiæ unc. vi. Deind. trajic. per chartam emporetic. Liquori trajecto add. camphor. raſæ in aq. reg. hungr. drachmis duabus ſolutæ grana duo, vel tria. Ter vel quater in die tela linea tenuiſſima ex hoc collyrio tepido expreſſa oculis ſubclauſis imponatur, ſic ut inter palpebras quidem aliquid liquoris ab uno ad alterum angulum ſe diffundat, non vero totum oculum perluat. Augeri, aut minui doſis vitrioli, et camphoræ poteſt, prout major, vel minor detergendi, et exſiccandi, reſolvendique erit indicato; imo omitti etiam poteſt camphora, ubi non bene feratur, aut ejus facultas ſupervacua videatur.

THE PTERYGION, OR UNGUIS.

313. HITHERTO I have been ſpeaking of the univerſal diſeaſes of the eye *, I ſhall now pro-

ceed to thoſe which ſeem peculiar to certain parts of it. The firſt which comes under conſideration is the *pterygion*, or little wing, as it were, which is named by Celſus *unguis* †; namely, a particular membrane proceeding generally from the greater angle of the eye, and adhering firmly to the membrana conjunctiva, thin, ſomewhat pellucid, fibrous, and tricuſpidated, extending from thence with its apex to the cornea lucida, and ſometimes covering the pupil in ſuch a manner, as either to obſcure the ſight, or deprive the patient of it intirely. If it be thick, and overſpread with turgid veins, it is commonly named *pannus*, or *panniculus*, and by the Arabians *ſebel*. Sometimes this complaint becomes malignant, and approaches to the nature of a cancer. In that caſe the membrane grows out farther, is rendered thicker and harder, becomes of a black or livid colour, and is affected with an acrid pain. Its cauſe ſeems to be, the infarction and extenſion of the caruncula, or little membrane, placed at the greater angle of the eye, in conſequence of which a relaxation in the ſtructure of the fibrils taking place, the nutritious fluid running into them always diſtends and elongates their terminations by its impetus.

* It was not my intention to treat of all the univerſal diſeaſes of the eye, but of the chief of thoſe which generally fall under the phyſician's obſervation. For had I been willing to have purſued them all, I muſt have been under the neceſſity of exceeding the bounds propoſed. I ſhall ſubjoin to them,

however, *hydrophthalmia*, *exophthalmia*, or *dropſy of the eye*; of which there are two kinds, one external, the other internal. The external one takes place when the aqueous fluid is collected under the adnata, occaſioning an œdematous ſwelling, and a conſiderable degree of redneſs in it. The internal happens when the aqueous fluid is ſo much increaſed that it renders the ball of the eye larger and fuller. Both complaints are eaſily diſcerned on inſpection. They are cured like other partial dropſies, but principally by the operation of paracenteſis. See a work entitled *Breve Trattato delle Malattie degli occhi de* Domenico Billi *Cerurgico d'Ancona*, *ed.* 1749, cl. ii. c. vii. p. 83. to 85.: where alſo will be found, ſome excellent obſervations concerning the other diſeaſes of the eye, both univerſal and partial.

† Woolhouſe ſuppoſes that in Ægineta the word *pterygion* is to be tranſlated by *ungula*, as the former has nearly the ſame colour as the nails of animals.

THE ONYX AND HYPOPYUM.

314. There is another diſeaſe of the eye, which from its figure has been called *unguis*, and in Greek ὄνυξ. It takes place when a collection of pus is formed between the lamellæ of the cornea, reſembling a nail, or rather the parings of nails. But if the pus be collected beyond the cornea in the aqueous humour, it is named *hypopyum*. Aetius * alone, and a few others after him, have made the proper diſtinction between the pterygium, onyx, and hypopyum.

* Lib. viii. c. 30.

THE CURE.

315. WHEN the pterygium is recent, thin, and of inconſiderable extent, it is ſometimes cured merely by gently diſcuſſing and cleanſing remedies, as white ſugar, honey, the powder of the bones of the ſæpia, egg-ſhells macerated in very ſtrong vinegar, and afterwards dried and reduced to a very fine powder. If theſe more gentle remedies prove inſufficient, ſome propoſe more powerful cathæretics. But the dropping, pouring, blowing, or in any other way applying irritating remedies to the eye, and ſtill more thoſe which are corroſive and cauſtic, is not void of danger, becauſe they always inflame it, generally reaching and injuring the pellucid cornea. Other practitioners ſeem to act more prudently, in gently and cautiouſly touching the pterygium with the lapis infernalis, and immediately immerſing the eye in water, that any thing of a cauſtic nature may be ſuddenly diluted and waſhed away, to prevent the other parts of the eye from being injured. But if the complaint nevertheleſs continue without being attenuated, or if it grow worſe, harder, and thicker, ſuch as the penniculus is, the beſt remedy is found to be lancing it, which ought to be performed by a ſkilful ſurgeon. It ſometimes

happens, however, that this cannot be done without ſome injury to the eye, on account of the intimate connection of the pterygium with the cornea and adnata. Beſides, the cicatrix which is left by the operation prevents or impairs the ſight. But we always free the eye from the *epiphora*, or watering, which is uniformly excited by the pterygium. If the pterygium acquire a cancerous diſpoſition, it ought either not to be touched with any medicine at all, or cut out by an operation. The onyx and hypopyum require the ſame method of cure by means of an operation, which therefore is the buſineſs of the ſurgeon.

SPOTS AND PUSTULES OF THE CORNEA.

316. THE cornea is liable to other diſeaſes beſides. In particular, its tranſparency is obliterated, and its colour changed, which happens in a threefold way. For its pellucidity is deſtroyed, either in conſequence of a thicker and denſer humour being collected between the lamellæ, or from its veſſels being rendered too turgid, on account of which the objects are ſeen dimly; which complaint is named *nubecula*; or a ſmall cicatrix is left by the ulcers, wound, or blow, which appears thicker and whiter than the reſt of the cornea, and this is named *albugo*, or *leucoma*; or, laſtly, after a blow, or any thing ſimilar, blood is effuſed and concretes in the cornea itſelf, or

under it, and therefore obſcures its colour: this is named *ſugillatio*, or *ecchymoſis*. Small puſtules are likewiſe occaſioned generally by an acrid humour, and theſe are named in Greek *phlyctænæ*. Theſe ſometimes degenerate into ſmall ulcers, of various ſize, colour, and diſpoſition; nay, ſometimes become cancerous. Nor does the cornea itſelf remain free from ſuch puſtules, veſicles, and ulcers, for they attack both the adnata and cornea alike. Each of theſe affections are at once diſcovered on inſpecting the eye.

THE CURE.

317. THE cure of the *nubecula* is eaſier than that of the *albugo* (316.). For the latter, if it be thick, and of long ſtanding, is ſcarcely to be removed; at any rate, in its treatment it is neceſſary to guard againſt irritating and corroding remedies, ſuch as thoſe generally are which are univerſally propoſed. For they aggravate the complaint by inducing an inflammation in conſequence of their irritation, or cauſing an ulceration of the cornea where it is found. Sometimes the fumes of fennel received into the eye, or the fat of vipers applied by means of a pencil to the nubecula, have been obſerved to be employed, not only without harm, but even with advantage. Likewiſe ſaffron and camphor are added with ad-

vantage to the collyria, for they prove gently diſcuſſing and reſolving, particularly in conjunction with the water of fennel, elder, and the herb eyebright. If the complaint proceed from a recent cicatrix, and it be not very thick, it is ſaid to be digeſted and attenuated by honey boiled up with ants. The cicatrices left by the ſmall-pox, particularly in children, generally in proceſs of time completely diſappear, or are greatly diminiſhed, merely by the aſſiſtance of nature, providing the patient be made to abſtain with the utmoſt caution from the powders and waſhes which are commonly employed to remove them. Likewiſe the puſtules, or *phlyctænæ*, frequently diſappear of their own accord, in conſequence of the veſicle burſting, and the contained liquor being poured out. They may alſo be opened with a proper needle, that a paſſage may be made for the acrid and corroding humour. But if they continue long, they require both internal and external remedies, which correct the acrimony of the fluids, and at the ſame time cauſe reſolution or revulſion. Cathartics, veſicatories, and cauteries, are celebrated for poſſeſſing the power of revulſion. But if any turgid blood-veſſel go to them, and ſeem to cheriſh the complaint, it ought to be cut acroſs by means of a lancet, and, that it may not join again and render the inciſion unavailing, it muſt be cut in ſuch a manner that ſome portion of it may be deſtroyed. But the ulcers which are left

by their burſting become ſometimes ſo deep, that the aqueous humour flows out in conſequence of the cornea being perforated, or the uvea becomes protuberant, or the cryſtalline lens is removed from its ſeat, and inclines forwards. They ought therefore to be cured as quickly as poſſible, firſt by thoſe remedies which are demulcent and cleanſing, and next by ſuch as prove nutrient, drying, and induce a cicatrix. Among other remedies, the ointment of Woolhouſe is held in great eſtimation. It is compoſed of the flowers of braſs, well waſhed and reduced to a fine powder, together with the beſt freſh butter, or fine hogs-lard. The ulcers ought to be occaſionally anointed with it. Laſtly, the ecchymoſis is cured by thoſe remedies which are ſuppoſed to reſolve and digeſt the effuſed and coagulated blood. Among theſe the firſt place is generally given to the blood expreſſed from the feathers of a young pigeon; but probably more advantage might be received from fomenting the eye, or from the vapour of eye-waters, from ſaffron, camphor, Hungary water, or from remedies for healing the wounds cautiouſly added to cooling collyria. But thoſe waters ſeem to be better calculated for this purpoſe which are extracted from the herbs eye-bright, rue, chervil, hyſſop, and from the flowers of the cyanus, elder-tree, teil-tree, and the like. It is attended, however, with greater advantage to prevent ſuch

ecchymoſes, by applying to the eye which has received the blow, bruiſe, or wound, cold water, renewing it frequently, for ſome time, on its becoming warm.

SUFFUSION OF THE EYE; OR *CATARACT.*

318. THE order requires that I ſhould proceed from the diſeaſes of the external to thoſe of the internal parts of the eye; among which the firſt that preſents itſelf is *ſuffuſion*, or, as the Greeks name it, *hypochyſis*, or *hypochyma*, commonly called *cataract*. In it the cryſtalline lens, or its integumens, are rendered opaque, ſo as to become impervious to the rays of light. Hence the ſight firſt becomes dull, and is afterwards intirely loſt. There are therefore two kinds of ſuffuſion, one proceeding from a morbid ſtate of the lens, the other from that of its integuments. The firſt ſeems to ariſe from the liquor which waſhes and nouriſhes the lens becoming in ſome manner deficient. It muſt neceſſarily then become dry, contracted, and opaque. This complaint is chiefly liable to attack thoſe whoſe profeſſion leads them to the conſtant inſpecting of very minute bodies, or who paſs whole days and nights in reading and writing. For while the muſculi recti of the eyes are continually ſtretched, which principally happens when

we wiſh to inſpect minute objects narrowly, the tunica arachnoides, or capſularis, is preſſed to the lens, and thus the fluid ſupplied by the tunic and its veſſels to nouriſh the lens is prevented from being ſecreted. This happens alſo, whenever the ſame muſcles, from any other cauſe, as inflammation or ſpaſm, are violently contracted for a length of time; or when the veſſels going to the capſule of the cryſtalline lens are inflamed or obſtructed. But, as I have already ſaid, the cryſtalline lens muſt neceſſarily become dry in conſequence of the deficiency of the nutritious fluid. The ſecretion may likewiſe become defective, from a morbid condition of the ſame veſſels, from their being deſtroyed, or too much diſtended, as it is probable happens in advanced life; from which it appears why old men are ſo frequently ſubject to this complaint. It may likewiſe occaſionally happen, that the fluid itſelf, which ought to nouriſh the lens, in conſequence of having become thicker and more tenacious, may deprive the lens of its pellucidity, or become ſo in conſequence of ſtagnation, checked abſorption, and the admixture of any heterogeneous principle.

319. The other kind of ſuffuſion ariſes when the capſule of the lens becomes morbidly affected. This happens in various ways, but particularly if that coat be lacerated by a blow or

wound, if the inflammation arising in the choroid coat and ciliary processes extend to the capsule of the lens, and injure it; if the habit of body be bad, or if a serous or impure colluvies, or the mucus of the nose, be carried to the internal parts of the eye, obstruct the vessels of this coat, and intercept the other passages; if the passages through which the humour of the lens ought to penetrate, become relaxed in consequence of a blow; if a person have abused the employment of mercury, or debilitated his system by venery, indolence, or too much indulgence in sleeping; or if he have laboured under diseases of the head, and particularly long continued pain. In all these ways, the capsule of the lens may be changed from transparency to opacity. Moreover, cataract does not arise simply from a morbid condition of the capsule, but also from opacity of the membrane of the vitreous humour, where it receives the lens; for if this common integument, by which it ought to transmit the rays to the retina, become opaque from any cause, it necessarily follows that the crystalline lens is incapable of performing its office, and must therefore appear opaque when the eye is attentively examined. These are the two principal kinds of the true and genuine cataract.

320. To these, however, ought to be added several other spurious species of cataract, which

have frequently occurred in practice. To them belongs the ſpecies named *cyſtica purulenta*, or *lactea*. For ſometimes, in conſequence of inflammation of the capſule of the cryſtalline lens, pus ariſes, and is collected between it and the lens, thus forming the cataract juſt now mentioned. Sometimes the cryſtalline lens itſelf is diſſolved and converted into a ſimilar humour, of a turbid and whitiſh diſpoſition, by which the paſſage of the ſight is rendered opaque. Sometimes in that corrupted fluid the lens has been obſerved floating, ſapleſs, and opaque *. Some of the moderns, after the manner of the ancients, among whom are enumerated Woolhouſe, Freytag, and others, have made mention of the *cataracta membranea*. For they ſuppoſe that the aqueous humour may be altered in conſequence of the admixture of other mucous ſubſtances, and that this kind of membrane is formed about the pupil †. In horſes, as Lower obſerves, the mucus exuding from the margin of the pupil or uvea, ſometimes concretes into a membrane which obſtructs the pupil. Others are of opinion, that it has not been eſtabliſhed beyond a doubt whether or not the exiſtence of ſuch a membrane in the human eye can be granted; although diſtinguiſhed authors affirm that they have obſerved it, or that they have even depreſſed it with the needle ‡.

* Heiſter *in Ephem.* N. C. cent. iv. obſerv. 198. Valſalv.

epiſt. xviii. § xvii. Platner, *Program.* ann. 1736. d. xvii. † Billi, l. c. cl. 26. c. 6. p. 88. ‡ Joſ. Irka, *De Morb. ocul. intern.* p. 69.

THE DIAGNOSIS.

321. INCIPIENT cataract is denoted by the appearance of inſects, hairs, *muſcæ volitantes*, cobwebs, and the like, floating before the patient's eyes. As it increaſes, the eyes become dim, and as it were covered with a film: the colour of the pupil is changed, and becomes like opaque glaſs. When the complaint attains its height, the ſight becomes more and more obſcured, and is at length intirely loſt, the colour of the pupil being either intirely white, or milky, aſh-coloured, azure, or of the colour of gold, lead, copper, or ſteel, or blue, or green, and ſometimes likewiſe red. At one time cataract is produced very ſlowly, at another within a few days; which happens when the eye has received a ſevere blow, or the coats of the cryſtalline lens have been ruptured or inflamed. If the lens alone becomes opaque and contracted, while the tunica arachnoides remains ſound and tranſparent, the patient at firſt ſees the objects better laterally than ſtraight forward, and better in the dark than in the day-time, and during a bright light. The origin of the diſeaſe points out that the tunica arachnoides, or proper coat of the lens, is

injured, namely, the preceding inflammation, or violent contuſion, no ſenſe of light remaining, even in the dark, although the pupil be then dilated; and the cataract within appears whitiſh, and as it were ſhrivelled.

THE PROGNOSIS.

322. If, in this complaint, while one eye is in motion, the pupil of the other be dilated, there are hopes of recovering the ſight; but if this do not take place, no one ever regains it, as Galen noticed *: for in that caſe it is very probable, that not only the optic nerve is affected, but alſo that the iris itſelf, its veſſels, fibres, and nerves partake of the complaint. If the patient do not ſee the light, although, when the ſound eye is ſhut, the pupil of the other be dilated, no hope, or ſcarcely any, that the ſight will be reſtored by puncturing the eye, is left. The firſt kind of cataract (318.) may ſometimes be prevented by a proper diet, and medicines, or, at leaſt, when it has attained its height, it may be removed by an operation, that is, depreſſed by the needle, or extracted by making an inciſion into the cornea. On the other hand, the other kind of the complaint (309.) is much more difficultly cured, and ſometimes cannot be cured

at all, as in it, beſides the cryſtalline lens, the tunica arachnoides, or the covering of the vitreous humour, where it adjoins to the lens, has contracted the diſeaſe in ſome of the ways already explained. And if any hope remain, it is not in medicines, but reſts intirely on the ſurgeon's performing the operation with dexterity. The ſpecies named *purulent*, *cyſtica*, *lactea*, as well as the *membranea*, if they ever occur in fact, ſcarcely admit of a cure, unleſs it be attempted by the method of extraction propoſed by Davieli. That the depreſſion may be ſucceſsfully performed, we have reaſon to hope, if the colour, from being whitiſh, become grey, or ſomewhat yellow: but no hope whatever remains if the colour be like that of poliſhed gold, braſs, or ſteel. But the eye itſelf claims our attention. For if it be neither hard nor too ſoft, and not altogether deprived of the ſenſation of light, it is conſidered as fit for the depreſſion or extraction of the cataract; while it is conſidered as altogether unfit for it, if it be hard, ſmall, concave, or too prominent. The complaint which ariſes from a violent and chronic diſeaſe of the head, particularly an excruciating headach, or from a blow, wound, or internal inflammation of the eye (302.), is ſaid to be ſcarcely curable. That ſpecies of the complaint alſo is conſidered as being unfit for undergoing the operation, in which, before the appearance of the cataract, the patient had la-

boured under dimneſs of the ſight. For in this caſe amauroſis, or gutta ſerena, ſupervenes, which is known to be approaching the nearer the farther the pupil departs from its natural figure, and the broader, more diffuſe, immoveable, and inſenſible to every appulſe of light, it appears: although every dilatation of the pupil, or *mydriaſis*, cannot be derived merely from a paralyſis of the optic nerve; for a paralyſis of the iris often proceeds from the reſolution of its own nerves. Likewiſe old age or infancy are unfavourable. The cure is alſo rendered difficult by a bad habit of body, or any peculiar inveterate taint of the fluids.

* *De Symp. Cauſſ.* c. 2.

THE CURE.

323. At the beginning of the diſeaſe, when the eyes begin to grow dark, every purſuit ought to be avoided in which ſtraining of them is required; and the cauſes by which the diſeaſe is either occaſioned or kept up, ought to be ſeaſonably obviated. Hence bleeding in plethoric patients, and purging in thoſe with bad fluids, muſt be occaſionally preſcribed, together with thoſe things which attenuate and purify the blood, rendering it in ſome meaſure volatile, and open the intimate and minute veſſels, if the complaint ſeem to ariſe from too great quantity of the fluids, or

from vitiation or thickneſs of them, or obſtruction of their paſſages. Particularly the whey of goats milk, the decoctions of the woods, viper-ſoup, the powder of millipedes, or their juice expreſſed by white wine, mercury, and its various preparations, and eſpecially the *panacea mercurialis cinnabarina*, cinnabar of antimony, and the like, are recommended. Of late years, with the ſame view, have been given, the extracts of hemlock, wolf's bane, black pulſatilla, belladonna, and others taken from poiſonous and acrid plants; but we are ſtill not ſufficiently acquainted with their good effects. I likewiſe find the ammoniacal gum applied externally in the liquid form; but of it alſo, we require more ample experience. Thoſe remedies, too, which call the humours elſewhere, or occaſion the excretion of ſuch as are noxious, or diminiſh their quantity, as bliſters, iſſues, and ſetons, are conſidered as being ſometimes attended with utility. Under this claſs fall errhines, the employment of which is occaſionally attended with the beſt effects. Boyle has mentiond an inſtance of a cataract having been diſcuſſed by means of turbith mineral inhaled by the noſtrils. Likewiſe attenuant and diſcuſſing remedies are applied externally, among which the glaſs of antimony, crocus metallorum, and the gall of ſome animals diſſolved in eye-waters, as that of fennel,

greater celandine, eye-bright, and ſo forth, are celebrated.

324. When the diſeaſe has advanced, or proceeds from cauſes which cannot be corrected by art, ſome of which I have already enumerated (318. to 320.), it ſeldom happens that any advantage is to be obtained from that method of treatment (323.). It muſt then be conſidered, whether the ſurgical operation can be attempted, which will appear chiefly from the prognoſtic marks already enumerated (322.). There are two methods of treatment, the one by *depreſſion*, the other by *extraction*. The depreſſion is performed by means of a two-edged needle introduced near the external canthus, one or two lines from the cornea, behind the uvea, by which the cryſtalline lens, together with its capſule, is cut in two, and depreſſed, and, laſtly, placed under the lower part of the vitreous humour, at the ſame time reſt being preſcribed for nine days, and both eyes being gently bandaged. The extraction is performed by making an inciſion into the lower part of the cornea, the inciſion being afterwards enlarged by means of a pair of crooked ſciſſars bent ſo as to form three fourths of a circle. In the mean time the eye is ſupported by means of a probe placed under the lower palpebra, and, after the inciſion is performed, is gently preſſed; in conſequence of which it happens, that the cryſtalline lens immediately paſſes through the hole.

if it be ripe; if not, it is extracted by means of a ſpoon, or ſome proper inſtrument. Laſtly, the edges of the *tunica arachnoides*, and the mucous flakes proceeding from its being ruptured, are gradually extracted. It is very manifeſt that the aqueous humour at the ſame time is poured out, but it is eaſily regenerated. Concerning both operations the writers upon ſurgery may be conſulted, in whoſe works the various methods of operating, together with various cautions, are delivered at length and with accuracy; hence, when there is room for an operation, the buſineſs muſt be intirely intruſted to an expert ſurgeon.

325. I have already made mention of the *maturity* of cataract. I ſhall now, in a few words, point out what its nature is, by what ſymptoms it betrays itſelf, and when the obſerving of it ought not be omitted. Cataract is ſaid to be arrived at a ſtate of maturity when the blindneſs no longer increaſes, and ſeems already to have attained its height. For in that caſe it can eaſily be ſhaken from its ſeat, like fruit from its ſtalk; and indeed it has ſometimes happened, in the progreſs of time, that it has fallen of its own accord from its ſeat, in conſequence of which the ſight has been reſtored. But in order that it may appear more certainly whether it be ripe or not, the eye ought to be compreſſed and rubbed with the finger. If it be ſtill crude, it ſpreads ſomewhat, and becomes broader, and immediately on the

external preſſure being removed recovers its former figure. On the other hand, no change is induced in it by external preſſure, if it have acquired maturity. The colour alſo muſt be carefully inſpected. The whiter it is, it denotes that the cataract is the riper; and the oppoſite inference is to be drawn from its being paler, or verging upon black. It is likewiſe conſidered as a favourable mark, if the colour be of a whitiſh blue, or ſomewhat yellow, as I have already remarked in par. 322. where alſo I took notice of thoſe colours which ought to be conſidered as unfavourable. Theſe obſervations, however, altho' they apply with juſtice to the genuine cataract, which I have already deſcribed in its proper place (318.), perhaps do not apply to the other caſes of the complaint (320.). This, at any rate, is certain, that that maturity is commonly requiſite for performing the *depreſſion*, though not for the *extraction* of the cataract. It remains for me to point out when the one is to be preferred to the other. In the firſt kind of cataract (318.), if it be not of very long duration, the depreſſion ſeems more proper than the extraction. For it is more eaſily performed, and, what is of more conſequence, much more ſafely, more readily, and with no leſs ſucceſs. I do not however aſſert, that in this caſe the extraction is to be rejected, if it be preferred; chiefly becauſe, when once extracted it cannot again riſe, as ſometimes

happens after its depreſſion. The extraction of it, however, is not altogether unattended with riſk; for, in performing it, if the eye be incautiouſly compreſſed, the vitreous humour flows out along with the aqueous, and the eye collapſes, without any hopes of a recovery being left. In the other ſpecies (319.), in which the lens and its capſules have become affected, the followers of Davieli with good reaſon ſuppoſe, that the extraction is to be preferred to the depreſſion. Nor is there a doubt, that if any thing can be done in the cyſtic cataract and other ſpecies (320.), that it depends intirely upon the extraction.

326. As the phyſician generally either preſides over the operation, or at leaſt directs the patients by his advice, he ought to know in what manner they are to be prepared for both operations, what kind of dietetic regimen ought to be employed, what bad conſequence may reſult from the depreſſion or extraction of the cataract, together with what ought to be avoided or prevented, as far as lies in his power. They ought therefore to be prepared by bleeding, particularly if they be plethoric, by purging, ſpare diet, and cooling remedies, that they may be rendered as little liable as poſſible to the inflammation with which the eye is apt to be ſeized after the operation. A ſerene day, and light apartment, muſt be choſen for the purpoſe, that the ſurgeon may perform his buſineſs in as clear a light as poſſible. After

the operation is performed, the eye muſt be covered with a rag or compreſs, wet with the white of an egg and roſe-water ſhaken together; and it muſt be alſo looſely ſupported with a bandage, with which the ſound eye likewiſe may be covered, that it may not by its movements prove hurtful to the other. Moreover, if the extraction have been performed, the eye ought to be properly bound, at leaſt for the firſt four days, leſt, if coughing, vomiting, or ſneezing occur, the vitreous humour ſhould burſt out from the wound of the cornea, to the very great danger of the eye. Likewiſe the bleeding, if neceſſary, is to be repeated after the operation, and in the evening of the ſame day a gentle paregoric is given, that the pain and irritation may be removed by inducing ſleep. The ſtricteſt quiet ought to be enjoined for at leaſt eight days, and care be taken that the patients ſhould lie with their head raiſed, employing a ſpare diet, together with diluent and refrigerant medicines; and that they ſhould guard againſt light, vomiting, coughing, ſneezing, chewing, and exceſſive heat. The belly muſt be kept open with injections, whey, and drink ſweetened with honey; nor muſt they be permitted to riſe out of bed to go to ſtool, but carefully adviſed to evacuate, without any effort, into a veſſel furniſhed to them. Laſtly, after eight or nine days the ſeverity of the regimen may be

ſomewhat remitted, and, providing no accident happen after the operation, the eye may be gradually accuſtomed to the light, which at firſt ought to be very faint. But it ſometimes happens, after the operation, that an effuſion of blood takes place into the anterior chamber of the eye; in conſequence of which hypopyum is very apt to ſupervene. If this happen, beſides bleeding, reſolving remedies ought to be added, and, in particular, gently aromatic and vinous fomentations. More frequently, however, ophthalmia ſupervenes, eſpecially after the extraction, when the cryſtalline lens, paſſing with difficulty through the foramen of the pupil, or taken out with a ſpoon, has injured the uvea and ciliary circle; for in that caſe the whole choroid coat is apt to be affected with inflammation, which will not intirely diſappear for fifteen or twenty days. It is to be cured like other ſevere internal ophthalmiæ.

GLAUCOMA.

327. NEXT to cataract comes *glaucoma*. This affection happens when the cryſtalline lens, together with its capſule, is much enlarged, and ſwells to ſuch a degree that the other parts of the eye are affected, and preſſed upon ſo as to cauſe uneaſineſs. The complaint betrays itſelf by the

following marks: the eye is hard, reſiſts the touch, and is unuſually prominent. There is a particular ſenſe of pain preſent in it *. That which internally impedes the viſion, and appears on inſpection, is of the colour of ſea-water, from which it has its name. When the diſeaſe has attained a height, it likewiſe induces dilatation of the pupil, or mydriaſis; but, in conſequence of the compreſſion of the vitreous humour and the retina, which is occaſioned by the great enlargement of the lens, it completely deſtroys the power of ſeeing. Writers make mention of another kind of complaint alſo, to which they give the name of *glaucoma*. This is peculiar to the vitreous humour, not to the cryſtalline lens. It is ſaid to be preſent when the maſs of the vitreous humour is increaſed, ſwelling beyond meaſure, and loſing its tranſparency, while it aſſumes a ſea-green colour, which is quite perceptible on inſpection †. In both kinds of glaucoma, any kind of manual treatment is ſuperfluous or hurtful, in the ſame manner as in cataract accompanied with mydriaſis, or in that conjoined with paralyſis of the pupil, of the nerves going to the eye, and retina itſelf, as I have already obſerved. But the vitreous humour much more frequently becomes diſſolved, in which caſe the eye not only grows dim, but likewiſe concave and flaccid, and makes no reſiſtance to the preſſure of the finger. "Hence,"

as Platner obſerves, " when the vitreous humour is corrupted, the lens alſo muſt neceſſarily become vitiated ‡ ;" which is another ſpecies of cataract, completely irremediable.

* Platner, *Inſtit. Chir.* § 1310. † *Ib.* ‡ *Ib.*

AMAUROSIS, OR GUTTA SERENA.

328. AMAUROSIS is that loſs of ſight which happens in conſequence of a morbid condition of the optic nerve or retina. If it be not conjoined with any other diſeaſe of the eye, which therefore appears ſound, excepting the pupil, which is obſerved to be only diſtended, it is named *gutta ſerena*. The proximate cauſe of this ſpecies of blindneſs is juſt the ſame as that of other paralyſes; and the remote cauſe is either ichor tinging and relaxing the nervous filaments, or the obſtruction, preſſure, or diſtraction of theſe laſt, too great fulneſs of the blood-veſſels, a varicoſe dilatation of the central artery or vein, convulſion or ſpaſm of the muſcular fibres, eſpecially of the muſculus attollens and abducens, which in ſome meaſure cohere with the ſheath of the optic nerve, and run over the nerve itſelf *, and corruption or compreſſion of the thalami of the optic nerves. Diſſection has diſcovered, that amauroſis, or blindneſs, proceeds from tumours compreſſing the optic nerves, as alſo from tur-

geſcence of the pituitary gland; from a calculus in the optic nerve, or in the pineal gland; from wounds, abſceſſes, corruption, or various kinds of tumours of the brain; from a watery tumour of the brain; from an effuſion of blood; from compreſſion of the thalami of the optic nerves; from depreſſion of the cranium; from wounds of the head and cranium; from the optic nerve being extenuated and corrupted †; from morbid ſtates of the brain ‡, and various affections of the ſame ‖; from the corpus ſtriatum being rendered ſoft §; from an effuſion of blood above the dura mater ¶; from a bone being forced into the ſinus falſiformis **; from ſhrinking of the thalami ††; from a ſchirrhus of the origin of the optic nerve ‡‡; from a tumour compreſſing it ‖‖; from hydrocephalus §§, and other organic cauſes. The diſeaſe may therefore originate from the forcing in of the itch; from the premature exſiccation of ulcers; from metaſtaſes, a fall, blow, abſceſs, or inflammation; from the long-continued habit of inſpecting ſhining and minute bodies; from a colluvies of the *primæ viæ*; from too active cathartics, and conſequent inanition of the veſſels; from the ſuppreſſion of uſual evacuations; and, laſtly, from hyſterical and hypochondriacal affections.

* Zinn. *Deſcrip. Anatom. Ocul. Human.* c. 8. § vii. & c. 9. § ii. † Haller, *Elem. Phyſ.* T. iv. l. x. ſect. vii. § xiv. ‡ *Id. ib. in not.* ‖ Boehmer. faſc. ii. præf. obſerv. 3. § Petit *Lettr.* 1. p. 7. ¶ Manne, *Obſerv.* p. 154. ** Warner,

obſ. 1. †† Morgagn. *De Sed. et Cauſſ. Morb.* 1. p. 74.
‡‡ Muzell. ii. p. 91. ||| *Id.* p. 81. §§ Morg. i. p. 181.

329. Hence the diagnoſis of amauroſis is obvious. But it is a difficult matter to know whether the optic nerve or retina alone be affected. This has been a ſubject of conſiderable controverſy. Ettmuller thinks that he has done away the difficulty by obſerving, that blindneſs, if it come on gradually, is to be aſcribed to a morbid ſtate of the retina, but if ſuddenly and inſtantaneouſly, that it is highly probable that it then proceeds from an affection of the optic nerve. But were the oppoſite concluſion to be drawn, it might perhaps be ſupported by equal probability. But how can a morbid ſtate of the retina be diſtinguiſhed from that of the optic nerve? Some add, if the eye be rubbed and preſſed with the fingers, and the pupil be obſerved to expand and contract, that it is a proof that the optic nerves remain ſound, while the retina, or ſome part contiguous, is injured. On the other hand, that the optic nerve is in a morbid ſtate, if no dilatation of the pupil follow. But I ſhould beg leave to remark to them, that the motion of the iris or pupil frequently remains in genuine amauroſis, proceeding both from a morbid ſtate of the optic nerve, and alſo from that of the retina. For it is a ſufficient proof that the ciliary nerves remain uninjured, if the motion of the iris and pupil be

not deſtroyed. We infer, therefore, with more certainty, that in true amauroſis, if the motion of the pupil ceaſe, beſides the optic nerve, the ciliary nerves, and thoſe belonging to the iris, are paralyſed; and that, on the other hand, if it remain, they are uninjured. But if the retina or optic nerve be immediately affected, the diſeaſe is of very difficult cure. The remedies which I have recommended for the cure of cataract and apoplexy, are completely applicable to amauroſis, if it admit of a cure. A ſalivation excited by mercury is ſaid to have ſometimes proved ſerviceable. Sometimes, alſo, relief has been obtained from rubbing the forehead, and from the application of the ſpirit of baum, amber, or hartſhorn, where the ſupra-orbitary nerve, which is a branch of the ophthalmic, comes out, repeatedly and long employed. The convulſive or ſpaſmodic amauroſis is eaſily cured, and almoſt diſappears of its own accord. Likewiſe, when it is a ſymptom of fevers, or other diſeaſes, it diſappears on theſe being overcome. It has ſometimes been obſerved, that women ſeized at the commencement of pregnancy, upon the fourth or fifth month of geſtation, or after delivery, recover their ſight; probably in conſequence of the veſſels of the brain being emptied, and the quantity and impetus of the blood being directed elſewhere. There ſtill remain other ſymptoms belonging to impaired or morbid ſight, as *amblyopia*, *hemeralopia*, *nyctalopia*, *myopia*, *preſbytia*,

ſtrabiſmus, *nyſtagmus*, *diplopia*, and ſo forth; concerning which, however, as being ſufficiently explained in general pathology, and ſcarcely requiring any peculiar treatment, I ſhall refrain from ſpeaking, the rather that moſt of them proceed from a malconformation of the eye, and are to be in ſome meaſure corrected by eye-glaſſes alone, or are frequently the effects of other diſeaſes, in conſequence of the removal of which they alſo are made to diſappear *.

* Among the more ancient authors who have treated of the diſeaſes of the eyes, may be conſulted Maitre Jean, Sanctyveſe, and Boerhaave; and, among thoſe of more modern date, Janin, and other well known authors.

CHAPTER XI.

OF GRAVEDO, CORYZA, AND PHLEGMATORRHAGIA.

330. THESE affections do not differ much, although by moſt authors they are diſtinguiſhed with too much nicety from one another. That catarrhal affection is named *gravedo*, in which the pituitary membrane is ſo much ſwelled, as to prevent the acceſs of the air into the noſtrils, rendering the voice obtuſe, occaſioning a ſenſe of weight, affecting the whole head, or only the forehead and temples, with a pain which is ſometimes dull, ſometimes pungent, ſometimes

throbbing, frequently accompanied with tinnitus aurium, while at the beginning either no diſcharge of humour takes place, or only a ſmall quantity of thin fluid paſſes off, which at length, towards the end of the diſeaſe, is diſcharged thicker and more tenacious. Some name it *coryza ſicca*, though improperly, in order to diſtinguiſh it from the genuine coryza, which is moiſt, and will be ſhortly explained.

331. When thin phlegm, or ſerous fluid, is diſcharged from the noſe, ſometimes crude, and without acrimony, ſometimes acrid and ſalt, and excites frequent ſneezing, with the other ſymptoms already deſcribed (330.), the diſeaſe aſſumes the name of *coryza*. It is commonly called *diſtillatio*. But if the diſcharge of limpid phlegm be uniform, or if rather the frontal ſinuſes abound with ſerous humour, in ſuch a manner that, on the head being inclined forward, it is immediately diſcharged with great violence, and inſenſibly, it is named by Juncker and others, *phlegmatorrhagia*. It frequently happens, that in theſe affections (330. 331.), a ſlight fever comes on, and unuſual torpor of mind, not as the ancients ſuppoſed, becauſe the humour is diſcharged from the brain into the noſe, but on account of both parts being ſtuffed with a ſimilar phlegm.

332. The proximate cauſe of gravedo ſeems to be a congeſtion of blood and ſerum in the veſ-

ſels, cells, and follicles, of the pituitary membrane and neighbouring parts, which not unfrequently approaches to the nature of a ſlight inflammation. In coryza, the ſecreting veſſels and mucous follicles are more affected, in conſequence of which a more copious ſecretion and excretion of the ſerous humour and mucus take place. In like manner, an increaſed ſecretion, and excretion of ſerous phlegm, in the frontal ſinuſes, ſeems to conſtitute the cauſe of phlegmatorrhagia. Nor can that be ſuppoſed to take place, unleſs the blood and ſerum be carried in too great quantity to thoſe parts of the pituitary membrane which inveſt the ſinuſes, forming a collection there. But the remote cauſes are conſidered as being too great a quantity of phlegm and ſerum, increaſed coheſion, or unuſual acrimony of it, relaxation or ſudden contraction of the veſſels and membranes of the head, and chiefly of the pituitary membrane. Hence moiſt and cold air, or that which is dry and hot, a bad ſtate of the fluids, the abuſe of tobacco, and checking of the inſenſible perſpiration, generally occur as occaſional cauſes. With regard to checking of the perſpiration, which is generally blamed, Keil, in his *Medicina Statica*, conſiders that it is free of all blame, and is rather inclined to derive coryza from noxious and frigorific particles of air, received by the noſtrils and pores of the ſkin, which pervert the proper craſis of the blood and fluids. Others aſcribe theſe affections to cold, as they know that, in conſe-

quence of cold, the blood, lymph, and mucus, are coagulated, and the veſſels and fibres corrugated. Simpſon rejected both of theſe opinions *. For he does not deny that the whole external ſurface of the body becomes conſtricted with cold; but he denies that in conſequence of this the fluids are forced in unuſual quantity, and with unuſual violence, to the pituitary membrane, and ſuch internal parts, as if by reflux, giving riſe to the catarrhal congeſtion. But, if I may be allowed to judge, each of theſe opinions appears to me to have a great deal of probability. For it appears that ſomething is introduced into the body from the cold air, by which the way is paved to the catarrhal affections, particularly in epidemic conſtitutions, in which ſometimes the diſeaſe is ſo univerſally diffuſed, that it ſpares no one, however carefully he may guard againſt the injuries of the ſeaſons, or againſt communication with the ſick; while at other times, under ſimilar circumſtances of the ſeaſons and cold, no ſuch thing is obſerved to take place. In general, however, no one acquainted with the phyſical properties of cold can deny that both the cutaneous perſpiration, as well as that from the noſtrils and fauces, is ſuppreſſed; that the blood, lymph, and mucus are condenſed; and that the veſſels, cells, and glands, are contracted by it. Nor is it untrue that the blood and other fluids, finding greater reſiſtance on the ſurface of the body, according to the laws of hydrau-

lics, ought to proceed to the internal parts in greater quantity, among which laſt muſt be reckoned the pituitary membrane.

* *In Diſſertationib.*

333. But particular ſeaſons of the year, and ſtates of the air, are more liable to occaſion thoſe complaints, eſpecially the ſpring and winter ſeaſon *, a dry, cold ſummer, ſucceeded by a rainy and warm †, or cold and dry, autumn ‡; as alſo ſudden viciſſitudes of the weather from heat to cold. "Hoarſeneſs and gravedo occurring in very advanced life are not concocted ‖. Pains of the head and forehead, both proceeding from violent winds, and from cold ſucceeding to violent heat, are chiefly removed by a gravedo coming on §. In all diſeaſes of the lungs it is a bad ſymptom when gravedo and ſneezing either precede or ſucceed to them ¶." So far with regard to the event of the diſeaſe, from the Prognoſtics of Hippocrates. Such affections, however, frequently make a mild diſeaſe, and are diſpelled merely by the aſſiſtance of nature. Sometimes, again, they prove more ſevere and durable, and then they become injurious to the brain itſelf, threatening apoplexy, lethargy, or ſuffocating catarrh. Nor is leſs apprehenſion occaſioned by the coryza, or phlegmatorrhagia, being ſuddenly ſuppreſſed, in conſequence of the ſudden expoſure to cold, or any other cauſe, if the ſerous colluvies being forced in cauſe acute and violent pains

of the head, which extend to the root of the nose, together with vertigo, tinnitus aurium, lassitude of the whole body, and slow fever, as we learn from Van Swieten **. If the humour which is discharged in coryza be very acrid, it gradually gives rise to ulcers of the nose, ozæna, and caries.

* Hippocr. aph. 20. 23. sect. 3. † Aph. 13. sect. 3. ‡ Aph. 14. sect. 3. || Aph. 40. sect. 2. § *Prædict.* 11. 148. ¶ *Præn.* 93. *Coac.* 399. ** § 69. n. 6. *in Boerhaav.*

334. The cure depends upon the indications which I have laid down in the catarrhal fever *. In general the most convenient remedies are those which prove diluent, resolve lentor, digest congestions, allay acrimony, open the perspiratory vessels, and occasion revulsion from the head and nose, as bleeding, dry and bloody cupping-glasses, bathing of the feet, cathartics of manna, the pills of the succinum Cratonis, infusions of tea-leaves, scordium, blessed thistle, the flowers of teil, or those of elder, decoctions of barley, scorzonera, bark, grass, sassafras, the cooling nitrous powders, and the like. The patient may also inhale by the nostrils the vapour of warm water, in which emollient herbs have been boiled; nay, tepid water itself; and, if the acrimony of the fluid require it, milk diluted with water, or some mucilaginous substance, may be drawn up the nostrils. Likewise mild perfumes of mastich, amber,

benjamin, and juniper-berries, are recommended, particularly to correct the cool air of the chamber. In a very ſevere affection of the head, or obſtinate complaint, bliſters of cantharides may be applied to the neck, arms, or behind the ears, nay, to the temples, with the greateſt advantage. If the vitiated humour have occaſioned ulceration of the pituitary membrane, decoctions or infuſions of ſage, pepperminth, milfoil, ſanicle, and roſemary may be injected. Honey may alſo be occaſionally added, to prove more cleanſing. If theſe be not found ſufficient, a decoction of guaiac ought likewiſe to be employed, particularly if the ulcer be foul. Our care, however, ought to be chiefly turned to the internal cauſe, namely, lues venerea, ſcurvy, bad conditioned fluids, or ſome other complaint conjoined with the diſeaſe. The nature of the diet alſo ought to be accommodated to the cauſes. Too dry air may be corrected by means of ſteam; that which is moiſt and impure by reſinous and balſamic perfumes, and a good fire. Friction of the whole body, and moderate exerciſe, on account of their promoting the circulation of the fluids and perſpiration, prove of the greateſt advantage.

* Vol. i. *Concerning Fevers*, § 348.

CHAPTER XII.

OF EPISTAXIS.

335. If an unuſual diſcharge of blood take place from the veſſels of any part of the body, it is generally named an *hemorrhage*. But according to the various parts from which it flows, it receives a peculiar denomination, for the ſake of diſtinction. The ancients taught that the blood could flow from its veſſels in a fivefold way: 1. by *anaſtomoſis*, or by dilatation of the extremities of the mouths with which they ſuppoſed the ends of the ſmall arteries to be endowed; 2. by *diæreſis*, or the diviſion of the ſmall veſſels; 3. by *diapedeſis*, or exudation; 4. by *rhexis*, or rupture; and, 5. by *diabroſis*, or eroſion. Dilatation of the exhalant arteries, which perhaps alone open at the extremities, takes place in conſequence of the impetus of the blood flowing in, or laxity of the ſmall veſſels, or atony of their orifices. *Diæreſis* proceeds from thoſe cauſes which cut, puncture, or in any ſimilar way produce a ſolution of continuity. *Diapedeſis* is occaſioned generally by tenuity of the blood, or by its watery diſſolution, together with relaxation

of the fibres, and dilatation of the inorganic parts with which all the veſſels and membranes abound. Rupture, or *rhexis*, proceeds from plethora, both real and apparent, from blows, falls, efforts, increaſed motion, obſtruction, ligatures, compreſſion, ſpaſm, debility of the membranes, &c. *Diabroſis* proceeds from various acrimonies by which the coats of the veſſels may be eroded, both internally and externally, until they are perforated. But theſe five kinds of hemorrhages ſeem referable to three, namely, the *anaſtomoſis*, *rhexis*, and *diabroſis*; for the *diæreſis* nearly correſponds with the *rhexis*, and the *diapedeſis* with the *anaſtomoſis*, or at leaſt they can ſcarcely be diſtinguiſhed; as both in the caſe of puncture or rupture the continuity is interrupted; and both in the diapedeſis and anaſtomoſis, the blood exudes without any ſolution of continuity.

336. In every ſpecies of hemorrhage, therefore, we are to inquire in what manner, and from what cauſe, it takes place; hence not only the preceding and concomitant circumſtances, but alſo the diatheſis of the blood, ought to be very carefully conſidered. Blows, friction, wounds, immoderate exerciſe, and other external cauſes, appear ſufficiently of themſelves. From the patient's habit, temperament, diet, manner of living, and ſo on, either plethora of the blood, or thinneſs and acrimony of it, or atony and laxity of the ſolids, are diſcovered. That the motion of the blood in any

part is retarded, while its impetus is elſewhere increaſed, will appear from its too copious appulſe to the part from whence it flows, and from the ſwelling, diſtenſion, redneſs, and violent pulſation of the neighbouring parts. Some light alſo may be obtained from the attentive conſideration of the blood which flows out. If that which is diſcharged be florid, red, or paſs out with great violence, it denotes abundance or thinneſs of it; and if it concrete with difficulty, it indicates diſſolution of it. But when it is thin, watery, and not unlike water in which fleſh has been waſhed, it denotes exceſs of the ſerum, and a watery diatheſis.

337. Hemorrhage is divided into that which proceeds from external violence, and that which ariſes ſpontaneouſly, and from internal cauſes. Concerning the former, which is likewiſe named *violent*, writers upon ſurgery treat; with the latter, or the ſpontaneous kind, phyſicians are principally engaged. There are various ſpecies of it, of which one is named *ſalutary*, or *critical*; another *not ſalutary*, or ſymptomatic; another *habitual*; and a third *accidental*. That one is called *ſalutary* which removes the cauſe, which gives riſe to a diſeaſe, or the diſeaſe itſelf; as happens when the body is freed by it from a ſuperfluous and redundant quantity of blood, or when congeſtions are removed, which frequently happens,

That one alſo is ſalutary which is named *criſtical*, as bringing about a criſis in acute diſeaſes, phrenitis, ſphacelus of the brain, apoplexy, hepatitis, pleuriſy, cephalæa, gravedo, convulſions, ardent fever, and ſimilar diſeaſes. That one is named *not ſalutary* which neither removes the diſeaſe nor its cauſe, or which induces ſome new one. Under it alſo falls the ſymptomatic ſpecies, as well as that which is chronic, exhauſts the ſtrength, and ſo leaves another diſeaſe behind it. The habitual ſpecies is of frequent recurrence, and comes on without any evident and particular cauſe. The *accidental* kind takes place in the oppoſite way.

338. Every perſon muſt perceive that the larger the veſſels are from which an hemorrhage takes place, the greater muſt be the danger. Likewiſe the more profuſe it is, and the more it diſcharges in a ſhort time, ſo that ſome pounds of it are quickly loſt, the weaker the patient is; and particularly if at the ſame time the face, lips, nails, and reſt of the body be pale, if the extremities grow cold, the arteries ſubſide, and if ſleep and fainting ſupervene, the more imminent is the patient's danger. But the fainting ought not always to create alarm; for ſometimes the blood, which the other remedies have not been able to check, in conſequence of the motion of the heart being ſomewhat interrupted, as it is forced very little, or not at all, *a tergo*,—ſtops, concretes into throm-

bi, and ſhuts the open veſſels, if they be not conſtricted by their contractile power. Likewiſe that ſpecies is more dangerous which proceeds from an internal cauſe; or at leaſt requires no leſs prudence and care than that which is occaſioned by an external one. On the whole, that one is more eaſily cured, nay, not unfrequently ceaſes of its own accord, which ariſes from plethora. Laſtly, whatever the ſpecies of hemorrhage be, if, in proportion to its duration, the quantity of blood which is loſt do not exceed bounds, it cannot of itſelf prove highly detrimental; but if it exceed bounds, fainting-fits, languor, cachexy, and dropſy, may be dreaded. Nor does it ſignify that inſtances of immenſe diſcharges of blood have happened, to the patient's imminent danger, without being followed by death. Laſtly, it is conſidered as a very bad ſign, if, in conſequence of an hemorrhage, the pulſe diſappear; if frequent fainting-fits occur, and if the extremities become cold, and the limbs convulſed.

339. The obſervations which I have already made concerning hemorrhage in general, may be applied likewiſe to the particular diſcharge of blood from the noſe which ariſes from the rupture, dilatation, eroſion, or relaxation of the veſſels of the pituitary membrane, and is occaſioned by the ſame remote cauſes as other hemorrhages. Beſides the common varieties, concerning which I have al-

ready ſpoken (337.), there is one peculiar to this hemorrhage which is derived from the manner in which the blood is diſcharged; for it either burſts out in great quantity, and then genuine epiſtaxis occurs, or it flows by drops, ſparingly and ſlowly, and then it is named *ſtillicidium*. Which laſt occurring in diſeaſes, is ſymptomatic of an unavailing effort of nature; for no diſcharge which is ſparing in general can prove critical *. An epiſtaxis occurring in old men is frequently the forerunner of apoplexy. If an hemorrhage attack people who are very much debilitated, it frequently proves fatal, or gives riſe to conſumption, or occaſions cataract, glaucoma, and *gutta ſerena*, and, in conſequence of theſe, loſs of ſight †. An hemorrhage taking place in hectic people, whoſe blood is in a ſtate of colliquation, and all their veſſels relaxed, announces the immediate approach of death.

* *Coac.* n. 57. 337. 340. † Platner, *Ars. Med.* § 269.

THE CURE.

340. THE ſalutary and critical epiſtaxis, providing it be not immoderate, in which caſe it could not be ſalutary, ought by no means to be checked. For when ſuppreſſed, beſides other complaints, it ſometimes gives riſe to convulſions, which are allayed by bleeding alone *. That

which is not ſalutary requires the employment of a proper method of cure. The cure is twofold: *firſt*, that which is uſed during the preſence of the hemorrhage; *ſecondly*, that which is required after the ſtopping of it. During the time of the hemorrhage thoſe remedies are employed which check the flow of the blood. When the epiſtaxis is at length checked, or prolonged for ſome time, the cauſe from which it proceeds is to be obviated. Many remedies are propoſed to ſtop the flow of the blood, of which ſome diminiſh the quantity of the blood, and avert its courſe from the noſe, ſome correct its bad quality, and others ſtraiten and ſhut the mouths of the veſſels. The remedies of the firſt kind are, bleeding, repeated at proper intervals, dry and bloody cupping-glaſſes applied to the neck, ſhoulders, back, legs, or hypochondres †, painful binding of the limbs retarding the return of the blood by the veins, ſuddenly terrifying the patient, the daſhing of water upon the back or face without appriſing the patient, or applying it to the pudenda, fainting, plaſters compoſed of gypſum, vinegar, and the white of an egg, applied cold to the forehead.

* *Coac.* 336. † Van Swieten, § 741. where he quotes Galen, who uſed to fix a cupping-glaſs upon the right hypochondre, if blood flowed from the right noſtril, and *vice verſa*; and affirms that in this manner the blood was immediately ſtopped.

341. To the ſecond claſs belong many different remedies, which vary according to the various morbid ſtates of the blood. For if the blood be too warm and abundant, the proper remedies are refrigerant things, conſiſting of lettuce, water-lilly, purſlane, ſorrel, and every thing of a ſubacid and cooling kind, new vinegar, and the mineral acids themſelves, as alſo emulſions of the cold ſeeds, and the like. Platner recommends throwing in cold injections, both to relax the belly, and allay the heat of the blood *. But if a watery thinneſs be preſent in the blood, and atony and laxity of the ſolids concur, aſtringents and ſtrengthening remedies, as plantain, nettles, comfrey, peruvian bark, caſcarilla, biſtort, tormentil, peaches, pomegranate, balauſtia, terra ſigillata, coral, and iron, are the moſt proper remedies. Laſtly, if any acrimony be preſent, it ought to be oppoſed by the uſual remedies, as well as by thoſe which prove demulcent and act as ſheathers, which have been already ſo often mentioned. But after the plethora has been removed, above all, opium is recommeded as checking every exceſſive evacuation, except the ſweat, by diminiſhing the ſenſibility of the nerves, and allaying the ſpaſmodic motions. But although it increaſes the force of the heart, it muſt not be adminiſtered to patients labouring under great debility, and it muſt be in ſome meaſure corrected, as in the vegetable æthiops,

in the *diaſcordium Fracaſtorii*, and other preparations.

* L. c.

342. The mouths of the veſſels are cloſed, which I propoſed in the third place, by the external application of medicines, ſuch as alum, vitriol, dragons-blood, agaric growing to the oak-tree like a horſe's hoof *, and the like. Pledgets ſprinkled with theſe, or dipped in ſolutions of them, are thruſt up the noſtrils in order to compreſs and conſtrict the open veſſels. Likewiſe liniments of the ſtrongeſt ſpirit of wine warm, or of the aſtringent balſam of gherl, dipped in the tincture of catechu, are recommended with that view. They act more powerfully when aſſiſted by the powder called *pulvis cottaris*, or when moiſtened with a ſolution of vitriol. In this caſe many place a great deal of reliance on the Roman vulnerary water, as one of the ſureſt remedies which can be procured, although its efficacy appears very doubtful to impartial people. Soot, if other remedies cannot be obtained, beat up with the white of an egg, and received on a pledget, or cotton, is thruſt up the noſtrils with very great advantage. But there is no occaſion for ſo many remedies. Pledgets alone, of ſcraped or folded linen, without any other addition, are ſufficient, if they be put into the noſtrils in ſuch a manner as to be ſtrongly preſſed againſt the open veſſels. This is done

in a variety of ways, as may be ſeen in ſurgical works. If it be neceſſary to inſert them ſtill deeper, ſo that they may reach the open mouths of the veins, they are attached to a thread, which being paſſed through the noſtrils and fauces, both applies them to the part from whence the blood iſſues, and directs them as may be found neceſſary; as the writers upon ſurgery point out. Sometimes merely by the continued preſſure of the noſe with the fingers, if the blood proceed from the fore-part of it, the diſcharge is ſtemmed.

* Concerning this kind of fungus and its employment, ſee *Comm. Lipſ.* vol. 1. p. 144. and Obſervations on the uſe of the Agaric, by George Heate, Lond. 1758.

343. When the blood is checked, if the hemorrhage proceed from any taint of it, or be derived from any manifeſt cauſe, we muſt employ remedies calculated for preventing the return of the diſeaſe, in conjunction with a proper regimen. The patient ought to be kept quiet, in a cool, dark chamber, ſlightly covered with bed-cloaths, his head being raiſed high; nor ought he to ſpeak much, or take any thing warm, or chew any thing ſolid. The diet ſhould therefore be liquid and cooling, that the flow of blood may not be increaſed or renewed by the motion of the jaws. Every thing which increaſes, quickens, or attenuates the blood, ought

to be avoided. Cold water ought to be given for the drink, the uſe of wine being prohibited, unleſs the greateſt debility indicate that a little weak, red, and auſtere wine may be allowed. All motion both of mind and body ought to be avoided with the utmoſt caution.

CHAPTER XIII.

CONCERNING PAIN OF THE EARS, AND CERTAIN MORBID AFFECTIONS OF THE HEARING.

344. THE ears, like other parts, are liable to a pain, or *otalgia*, and indeed of a very ſevere kind. I ſhall therefore ſpeak firſt of that pain, and in the next place turn my attention to particular morbid ſtates of the hearing, namely, abſceſs and ulcers of the ear, dulneſs of hearing, deafneſs, and tinnitus aurium. Two kinds of otalgia occur, the one without inflammation, the other with it. The firſt ſpecies is commonly named *otalgia ſpuria*, or *notha*; the latter *vera*. This laſt is named by ſome *otitis*. The moſt frequent ſeat of each complaint is the membrane which lines the meatus auditorius, and ſecretes the wax. But notwithſtanding this, the other parts of the inſide of the ear, as the tympanum and labyrinth, do not remain free from

the pain, although in fact theſe parts be leſs frequently affected.

345. The *otalgia uotha* is occaſioned by irritation of the nerves or ſpaſms, or by the congeſtion of an acrid and ſerous rheumatic humour, or ſome other cauſe, diſtracting, compreſſing, or vellicating the fibres, nerves, or veſſels. The *genuine otalgia*, again, or *otitis*, is cauſed by the inflammation of one or more parts of the ear. In the former no fever is preſent; in the latter fever is conjoined with the pain; which conſtitutes the principle diſtinction between them. In both tinnitus and deafneſs occur. The cauſes which give riſe to otalgia are manifold. In children, the moſt frequent is ſuppoſed to be the cutting of the *dentes molares*: for the branches of the inferior maxillary nerve, which is the third branch of the fifth pair, and belongs to the tongue, unite with a ſmaller nerve, which deſcends from the ear, and is derived from the ſeventh pair, and its portio dura *. Hence it follows that the greateſt ſympathy muſt neceſſarily ſubſiſt between the jaw and ear, in whatever manner it takes place. After this cauſe come ſudden and violent viciſſitudes of the weather; the catarrhs ariſing from thence; cold ſuddenly applied to the head or feet when warm; the ſuppreſſion of tinea, achor, or the itch; metaſtaſes in acute fevers; hurtful things entering or falling into the ear, or growing there; and laſtly, all thoſe

things which I have already repeatedly ſhewn to be capable of inducing pain or inflammation.

* Platner, l. c. § 350.

346. The *otalgia vera*, or *otitis*, in particular, betrays itſelf by a very acute pain, heat, increaſed pulſation of the arteries, violent fever, and frequent pricking, as if the part were bored with ſomething. But no ſwelling or external redneſs are obſervable, unleſs the external parts alſo happen to labour under the ſame complaint. According to the variety of the parts affected with the inflammation, particular ſymptoms are obſerved. When the *meatus auditorius* alone is affected, the pain is more external; returns on being touched; the hearing rather becomes dull, than is loſt; and its internal ſurface, ſo far as it can be noticed, is remarkably red and ſwelled. Moreover, we underſtand that the membrane of the tympanum and its cavity are inflamed, if the ſenſe of pain be felt more internally and acutely, if it extend to the fauces, if it be accompanied with great tinnitus, and do not altogether deprive the patient of hearing. All the ſymptoms are worſe, if the innermoſt, or third cavity of the ear, namely, the labyrinth, be affected. For then the hearing is almoſt intirely loſt; the pain is very acute and internal, ſtretching to the head and brain, and almoſt depriving the patient of his ſenſes; and

not unfrequently convulſions, vomiting, fainting, and delirium ſupervene.

347. Genuine *otalgia*, or *otitis*, is more ſevere and dangerous than the other; and the more ſo ſtill the more internal its ſeat is, and the leſs it ſeems to ſpare the brain. Hence it not unfrequently proves fatal on the ſeventh day, unleſs it be very ſpeedily removed by art, or relieved by an epiſtaxis, or a diſcharge of pus from the ear. For it is ſometimes reſolved; more frequently it terminates in ſuppuration, and, afterwards a diſcharge of pus taking place, the pain and heavineſs are greatly relieved. Sometimes, however, the abſceſs leaves an ulcer, which, if it do not unite properly, occaſions conſtant ringing of the ears. The otalgia proceeding from acrid ſerum, or catarrhal affections, is ſometimes terminated by ſweat, ſometimes by a diarrhœa.

THE CURE.

348. At the beginning of the complaint, therefore, the inflammation muſt be reſolved by bleeding, ſcarification of the occiput, or ſhoulder-blades, bathing the feet, gentle purging, and by antiphlogiſtic and diluent remedies. Reſolution ought likewiſe to be attempted externally by means of anodyne fomentations and cataplaſms. The pain is alleviated by tepid water, women's milk, or that of cows, oil of ſweet almonds, of

the yolks of eggs, of white poppy-ſeeds, or that of hyoſcyamus, recently expreſſed, being dropped into the ear, or by ſtuffing the ear with cotton moiſtened with them. If the otalgia ariſe from catarrh and a ſerous congeſtion, the humour muſt be drawn from the part by cupping-glaſſes; by cantharides applied to the neck or maſtoid proceſs; by ſialogues, by the root of pellitory, of white burnet, maſtich, pepper, and by tobacco kept in the mouth; by cathartics and ſudorifics. Nor muſt bleeding be omitted when the ſeverity of the pain requires immediate relief. But if affections of the nerves and ſpaſms have occaſioned the pain, as frequently happens in hyſterical and hypochondriacal people, it muſt be oppoſed with opium, anodyne, and antiſpaſmodic remedies. It is proper to know, however, that every thing injected into the ear ought to be previouſly ſlightly warmed. Nor ought theſe remedies, particularly the oily ones, to be uſed to exceſs; for it ſometimes happens, that the internal parts of the ear are ſo relaxed or obſtructed as to be afterwards difficultly reſtored. Laſtly, if any foreign body have paſſed into the ear, or been formed in it, ſo as to give riſe to otalgia, it ought to be removed with as much dexterity and diſpatch as poſſible. Worms may be deſtroyed by means of oily, ſweet, or, as others ſuppoſe, bitter things; gnats and other inſects may be extracted by introducing water, honey, or cotton, into the ears. Celſus

obſerves, " a little wool may be put into the ear, in order that the gnat or other inſect may enter it, and be extracted along with it *." When the ſuppuration has commenced, emollient cataplaſms, compoſed of fine bread and milk, and boiled with the leaves of marſh-mallows, may be applied. When the pus is digeſted, it may be drawn out by fatty matters, or by hogs-lard, or butter, and the ear may be waſhed either with ſimple barley water, or with that which is mixed with honey, and, if neceſſary, ſome honey of roſes may be added; but when a great diſcharge of humour proceeds for a length of time from the abſceſs or ulcer, it ought not to be raſhly checked. Frequently when retained it produces eroſion, or is converted towards the brain, to the imminent danger of the patient. It is therefore better to employ thoſe things which correct the dyſcraſy of the fluids, and improve the whole ſyſtem; in conſequence of which it generally happens that the ulcer heals up without any injury. Sometimes the ſebaceous follicles or glands, by which the wax of the ears is ſecreted, are obſtructed ſomewhere, and give riſe to the formation of a tubercle. If it undergo inflammation, a ſevere otalgia ariſes, which is apt to quickly terminate in an abſceſs. Veneſection is ſeldom neceſſary in it. Emollient anodynes and emulcents alone prove ſufficient.

* L. vi. c. vii.

DULNESS OF HEARING.

349. The faculty of hearing is impaired, or the hearing becomes dull and difficult,—which affection is named by Sauvages *dyſcœa*, or *hypocophoſis*,—in various ways, particularly from a morbid condition of the external ear, from its diviſion, mutilation, or depreſſion, or from the meatus auditorius being obſtructed, compreſſed, or ſwelled, from induration of the wax, from hardened pus and cruſts formed in it, or from relaxation of the membrane of the tympanum and other parts, or from too great an abundance of ſerous fluid, as happens in catarrh; or even from ſympathy with the *primæ viæ*, as in hypochondriacal people. The want of the external ear is ſupplied by an ear-trumpet. Obſtruction of the meatus auditorius is removed by diſſolving the wax, hardened pus, or cruſts which are formed in the paſſage by means of ſaponaceous and oily injections, and by the extirpation, cutting, or deſtroying of the tumours. The membrane of the tympanum and contained parts recover their ſtrength from dry and ſlightly balſamic ſuffumigations, or from the eſſence of caſtor, tincture of amber, and ſpirit of wine ſomewhat tinctured with camphor, in which cotton being dipped is inſerted into the meatus audi-

torius, and left there, to exclude the damp air. A collection of ſerous and catarrhal humour is removed and evacuated by errhines, ſialagogues, diuretics, hydragogues, ſudorifics, iſſues, ſetons, and bliſters, applied to the back of the head or maſtoid proceſs. A colluvies in the *primæ viæ*, if it render the hearing dull, is removed by cathartics; and ſpaſms, if the diſeaſe proceed from them, are allayed by paregorics and antiſpaſmodics.

DEAFNESS.

350. If the meatus auditorius, as ſometimes happens in newly-born infants, be obſtructed by an unuſual membrane, or any other organic fault; or if the membrane of the tympanum become rigid, or offified, or burſt, or be eaten through; or if the bones of the tympanum, or labyrinth, and other internal parts, be contaminated in conſequence of any ſevere injury, caries, or ulcer, or be otherwiſe deſtroyed; or if the Euſtachian tube have united, which may happen in conſequence of a tumour, ſcirrhus, or cicatrix formed in it, as after venereal ulcers of the throat; or if the auditory nerves have become paralyſed, as happens after a blow of the head, or apoplexy; it is perfectly manifeſt that deafneſs, or *cophoſis*, ſucceeds, or that the hearing is deſtroyed, leaving ſcarcely any hope of a cure, excepting in the caſe

in which the meatus may be opened by an inciſion. Moreover, the cavity of the tympanum is ſometimes filled with water, on account of the Euſtachian tube being obſtructed, or otherwiſe ſhut, or on account of the power of the abſorbents or lymphatics being impaired or intirely loſt; but it is filled in ſuch a manner that the membrane of the tympanum is forced outwards, and the ſtapes preſſed with violence againſt the foramen ovale, while the membrane is preſſed againſt the foramen rotundum; on which account the hearing muſt neceſſarily be gradually deſtroyed. In that caſe, if there be any remedy, it appears to depend on gargles or ſialagogues, or upon an ulcer burnt in upon the maſtoid proceſs,—the cells of which communicate with the cavity of the tympanum,—by means of hot iron, or the lapis infernalis, as Balloſt adviſes, the diſcharge being kept up for a great length of time.

MORBID HEARING.

351. It remains for me to turn my attention to morbid hearing, to which ought to be referred, too acute hearing, tinnitus aurium, bombus, and ſibilus, namely, morbid ſounds, which ariſe from exceſſive ſenſibility, or from increaſed and irregular tremors, excited in the cavities, bones, membranes, and other parts of the ears. Such morbid conditions are comprehended by Sauvages under the ſingle term of *paracuſis*, or *falſe hearing*.

Theſe tremors are occaſioned either by plethora, or by a quantity of blood forced into the veſſels of the head and ears, or by increaſed irritability of the muſcular fibres going to the ears, or excited by particular ſtimuli, or by the agitation of the air contained in the cavity of the tympanum, or of water in the labyrinth and its ducts. For it muſt appear evident, that, in conſequence of the violent pulſation of the arteries of the ear and brain, an unuſual ſound, like that of a body when ſtruck, ariſes, or that, in conſequence of exceſſive tenſion of the membrane of the tympanum and muſcles, or too great ſenſibility of the nerves, the hearing is rendered troubleſome, and too acute; or that, from the concuſſion of the bones, or water of the labyrinth, tinnitus or ſuſurrus is occaſioned, or from the air ſhut up within the cavity of the tympanum being expanded, and ſuddenly exploded through the Euſtachian tube, that bombus ariſes, or that, from the ſame burſting out gradually and with difficulty through it, a kind of hiſſing ſound proceeds. Sometimes theſe various ſymptoms of morbid hearing occur apart; ſometimes they precede convulſions, epilepſy, apoplexy, or delirium; ſometimes they ſupervene in acute diſeaſes, at other times they ſucceed to other complaints, as hypochondriaſis or hyſteria. Each of theſe affections muſt be treated in a manner which ſeems calculated to their cauſes, and which may be very readily collected from what has already been ſaid.

CHAPTER XIV.

CONCERNING ODONTALGIA.

252. TOOTHACH is named in Greek *odontalgia*. That part of the teeth which lies within the ſocket is hollow, and provided with nerves and blood-veſſels. On the outſide they are ſtrengthened by the perioſteum, ligaments, and the gums. If inflammation occur in any part, or a ſerous collection, or an acrid or irritating humour vellicate any part of them, or if a tooth become carious, various pains and ſymptoms muſt neceſſarily be the reſult. Generally the gums ſwell, and become red, nay, the cheek alſo becomes ſimilarly affected; ſometimes fever comes on, throbbing, conſtant watching, pains of the ears, eyes, and head, by conſent. The inflammation, whether accompanying or ſucceeding to the complaint, frequently terminates in abſceſs. If the internal parts become affected with it, caries, looſeneſs, and deſtruction of the tooth, or fiſtula, may be dreaded. If the external parts be affected, *parulis*, *epulis*, and deſtruction of the gums, are the conſequence. The remote cauſes are almoſt the ſame as thoſe of otalgia. The cure

alſo ought to be varied according to the nature of the cauſes, as I have already preſcribed in the cure of otalgia.

353. Beſides thoſe remedies which were firſt propoſed for the cure of otalgia (348.), gentle diaphoretics are recommended, particularly the rob of elder-berries, to the extent of an ounce for each doſe, together with anodynes. The patient ought to keep in his mouth either warm milk, or water in which the heads of white poppies, or the ſeeds of hyoſcyomus, have been boiled, with the addition of a little vinegar, care being taken not to ſwallow it. Likewiſe, externally, fomentations, and the ſofteſt cataplaſms and remedies for removing pain, ought to be applied to the part affected. Moreover, ſome opium may be given internally, if the pain prove diſtreſſing. In that ſpecies of odontalgia which ariſes from a ſerous congeſtion, or acrid humour, the cure which I have mentioned as being beſt calculated for otalgia ariſing from a ſimilar cauſe (348.) ſeems beſt adapted. Some propoſe burning the extremity of the anthelix, antitragus, or lobule of the ear, with hot iron, or moxa. But behind the ears is a better place, or under them, as an artery, vein, and nerve lie there under the ear, enter the lower jaw, and are diſtributed along its whole length to the root of all the lower teeth. In ſuch a caſe, therefore, cauteries or bliſters are more proper, which draw out and excrete the acrid ſe-

rum, and in ſome meaſure deaden the ſenſibility and ataxy of the nerves. For it has been obſerved, that merely by powerful compreſſion behind the lower jaw, the pain is ſometimes immediately allayed. Likewiſe plaſters compoſed of maſtich, peruvian balſam, camphor, and opium, applied to the temples and beneath the orbit, occaſion immediate relief. For the nerve proceeding from the fifth pair to the temporal muſcles is of the ſame origin as the nerves which go to the roots of the teeth, and the nerve which paſſes out immediately under the orbit is diſtributed to the fore-teeth of the upper jaw.

354. The pain proceeding from a carious tooth is beſt relieved by inſerting a piece of opium, or by a drop of oil of caryophyllus, or ſpirit of vitriol dropped into it, or dropped on ſome cotton, and placed in the hollow. If the pain do not yield to this treatment, a hot iron-wire may be introduced through a cannula into the hollow of the tooth, in order to deſtroy both the caries and the internal nervous membrane. The hole muſt then be ſtuffed with a bit of lead properly adapted to it, that the complaint may not be aggravated, or made to return by the food, or drink, or by the acceſs of the air. But if theſe avail nothing, or cannot be employed, the tooth muſt be extracted, not only to remove the pain, but alſo to preſerve the other teeth from the contagion, which is very apt to

ſpread among them. The drawing of the tooth, however, muſt be avoided if great inflammation or conſiderable ſwelling ſurround it. It is likewiſe proper to draw the tooth when there is a fiſtula near it, or appears to be cauſed by the caries of it. It cannot be made to unite or fill up, unleſs by drawing the tooth. But the extraction of the canine teeth is attended with more riſk, on account of the roots being deeper ſeated; nor is the extraction of the laſt or middle grinders, which are provided with three or four roots, attended with leſs difficulty. For the eye may be injured by the drawing of the upper teeth; and the extraction of both the upper and under teeth not unfrequently occaſions hemorrhage, inflammation, laceration, and fracture of the jaw. The hemorrhage is ſometimes ſo great that it cannot be allayed by the uſual ſtyptics. I have read of a phyſician having allayed an hemorrhage which had continued five days, by applying a dry ſponge to the ſocket of the tooth, and preſſing it hard with the hand *. I myſelf once ſtopped a ſimilar hemorrhage, proceeding from the very ſame cauſe, and which had continued for upwards of twenty hours, by filling the ſocket with the powder of the fungus agaricus, and afterwards gradually laying thin ſlices of it above, that they might be preſſed and kept in their place by the teeth of the other jaw.

* *Comm. Lips.* vol. iv. p. 91.

355. As it is known that a tooth when cutting occaſions odontalgia, the gums ought firſt to be ſoftened by means of oily, fatty, and mucilaginous remedies, and afterwards, if neceſſary, they may be lanced, in order to open a paſſage for the tooth. The cure of abſceſs, fiſtula, together with that of the *parulis* and *epulis* of the gums, is the province of ſurgery. If the teeth become looſe, and the gums waſte, we muſt inquire into the cauſe of it. If the tartar accumulate between the gum and the teeth, in ſuch quantity as to ſeparate the fleſh from the tooth, it muſt be diſſolved by acids, or removed by means of a proper inſtrument. If relaxation of the ligaments and gums render the teeth looſe, they ought to be ſtrengthened by means of aſtringent and ſtimulant remedies. But when corroding, acrid, or acid lymph produces this effect, antacid and balſamic remedies, both external and internal, ought to be called to the patient's aid.

CHAPTER XV

CONCERNING THE SWELLING OF THE PAROTID GLANDS AND JAWS *.

356. SWELLINGS of the parotids are properly divided into three kinds. The *firſt* are, thoſe which ſupervene in acute fevers, eſpecially malignant or peſtilential fevers. I have already treated of theſe elſewhere (Vol. I. par. 302.). The *ſecond* are, thoſe which ſucceed to chronic diſeaſes, ſcrofula, lues venerea, ſcurvy, and a ſcirrhous and cancerous diatheſis. Theſe are referable to other diſeaſes, the cure of which is to be delivered elſewhere, or may be referred to ſurgical diſeaſes, concerning which it is not my buſineſs here to treat. But the *third* kind occurs when the parotid and maxillary glands ſuddenly become ſwelled and painful, and are not long attended with ſevere, or at leaſt not dangerous ſymptoms, if they be properly treated, being in a ſhort time completely reſolved. Some affirm that children and young people only are attacked with ſuch tumours. But although I confeſs that they are more liable to this complaint, experience has ſhewn that ſometimes no age and neither ſex remains exempt from them, particularly when they pre-

vail epidemically; for they ſometimes prevail like an epidemic or ſtationary diſeaſe. Nay, in ſome countries they are ſaid to be obſerved occurring as it were endemically †. Such tumours, on account of their never undergoing ſuppuration, but readily diſappearing by reſolution, are generally conſidered as being *lymphatic* and *ſerous*, although they ſometimes betray undoubted marks of an inflammatory diſpoſition. Phyſicians have beſtowed no particular name on them, their deſcription and cure being frequently omitted by them. They are therefore claſſed by ſome under the head of *angina notha*, or *aquoſa*, or bronchocele ‡. In Tuſcany and other parts of Italy they are commonly named *orecchioni*, *gotoni*, and *gotazze*.

* Synonyms.

The *Orecchioni* in Tuſcany. The *Gotoni* about Bologna and Flaminia. The *Oreillons* and *Ourles* in France. The *Parotis ſpuria* of Lieutaud, *Synopſ. Univ. Prax. Med.* l. 2. ſect. 2. p. 300. ed. Patav. 1777. The *Parotis benigna et fortaſſe ſimplex* of Sauvages, *Noſol.* cl. 1. ord. 3. gen. xvii. The *Parotides ſeroſo glutine tumentes* of Laghi, *De Bon. Scient. et Art. Inſt. atq. Acad.* T. v. P. i. in the *Opuſcula*, p. 117. *Narbonenſium morbus familiariſſimus, cujus levior gradus* Gales, *gravior* cournudos *vocatur*. Lieutaud, l. c.

† *Journ. de Méd.* T. vii. p. 379. where Rochard affirms, that this diſeaſe prevails endemically in *Belle-iſle en Mer*, and gives an accurate deſcription of it. ‡ Lieutaud. l. c. Tozzetti, *Prim. Raccolt. d'Oſſerv. Med.* p. 176. Vogel, *De Cogn. et Cur.* &c. § 192.

357. Concerning the nature of theſe tumours, therefore, I ſhall proceed to give the obſervations of others, as well as my own. This diſeaſe generally prevails in the winter, but more frequently in the ſpring, without being preceded by any other taint of the body. It is more hoſtile to children and young people than to adults; though ſometimes, as I have already remarked, it does not ſpare people advanced in life; it generally ſucceeds to ſudden changes of the atmoſphere from heat to cold, and ſnowy damp weather. It frequently attacks the patient after violent exerciſe, or expoſure to cold, and affects ſubjects of a warm and bilious temperament more ſeverely. The parotids at firſt become gently ſwelled, and in a ſhort time more ſeverely, growing hard, and being affected with a particular tenſive pain. They occaſion ſcarcely any change of colour in the ſkin, nay, ſometimes exhibit a ſlight degree of œdema in the integuments, which led Louis to ſuppoſe that the cellular membrane was more affected than the body of the gland *. Sometimes, however, the integuments ſhew no œdematous ſwelling, but the tumour, being hard and tenſe, is acutely painful, and ſuffuſed, as it were, with an eryſipelatous redneſs. Beſides the parotids, ſometimes the maxillary glands are ſwelled along with them, and, in ſome caſes, likewiſe thoſe of the neck; in other caſes the tonſils themſelves are affected, ſo that not only

manducation, but alſo deglutition áre rendered difficult. The ſize of the tumour varies, being at one time more flat, at another time more raiſed, and ſometimes ſo great as to deform the whole face and appearance.

* Encyclopæd. *vid. Oreillons.*

358. When the diſeaſe is mild, it neither excites fever, nor does it detain the pateint to his bed. In that caſe, in general, merely by the aſſiſtance of nature, it gradually decreaſes in a few days, and terminates. Reſt, however, in bed, warm and gentle diaphoretic drink, moiſt and emollient fomentations, or folds of linen dry and warm, or, laſtly, anointing them with oily applications, are the means by which we gently and ſafely promote the reſolution. The diſeaſe ſeldom proceeds beyond ſeven days. But if it be more ſevere, it either commences with fever, or fever ſupervenes in it, which is at one time ſlight, mild, and of ſhort continuance, at another time great and violent, ſometimes continuing for ſeveral days, generally obſerving the continued remitting type, and renewing its paroxyſms in the evening. That principally happens when the complaint prevails epidemically. Sometimes the power of the epidemy is ſo widely diffuſed, as not to allow perſons who are in a ſtate of convaleſcence from other diſeaſes to eſcape it. In the epidemy which prevailed in the year 1753, at Bologna, obſerved and very accurately de-

ſcribed by Laghi *, the fever, when the complaint was ſevere, did not ceaſe till after the ninth, eleventh, or fourteenth day. It is then neceſſary to let blood, and even to repeat it; as I myſelf have frequently experienced, and as Laghi affirms. In general, however, when the fever is leſs urgent, bleeding being omitted, gentle cathartics, diluent antiphlogiſtics, ſpare diet, and emollient fomentations, are ſufficient. Sometimes even fomentations are not borne well. The ſafeſt of all, and moſt eaſily borne, are cataplaſms compoſed of bread, milk, and marſh-mallows, or of the ſimple pulp of ſweet apples. But thoſe topical remedies are to be avoided, which are properly named *reſolving*; for they either aggravate the pain and ſwelling, or occaſion hurtful metaſtaſes.

* L. c.

359. When the ſwellings ſubſide, eſpecially too ſoon, namely, in the firſt days of the complaint, it frequently happens, that the humour which affected the parotids and other neighbouring glands, by a wonderful metaſtaſis proceeds ſpontaneouſly to the ſcrotum. In which caſe, not only does the ſcrotum become ſwelled, painful, and red, but likewiſe one or other teſticle, ſometimes both, are ſeized with actual inflammation, the fever at the ſame time becoming more intenſe and violent. This metaſtaſis taking place from the parotids to the teſticles in epidemic diſeaſes, has been clearly noticed by Hippocrates *,

and was obſerved in the ſpring of the year 1750, by Tozzetti †, and after him, in the year 1753, by Laghi. Nor did this uncommon kind of metaſtaſis eſcape my own notice much about the ſame time at Fayence, where the diſeaſe prevailed epidemically. Others have obſerved the ſame phenomenon, among whom I muſt not omit the name of Rochard ‡, a French author, together with that of Pratolong, who very lately (an. 1782.), obſerved it at Genoa, a phyſician of learning and extenſive experience, as a letter of his, ſent to me about the end of the month of May of the ſame year, proves him to be. When, therefore, the ſwelling of the ſcrotum and teſticles ſupervenes, cauſing an aggravation of the fever, the bleeding muſt immediately be repeated, or ſet on foot, in ſuch patients as have not already been bled, and emollient fomentations muſt be employed, not only to alleviate the pain and inflammation, but to cauſe the gentle and gradual ſubſiding of the ſwelling. For ſuch ſwellings, both of the parotid glands and of the ſcrotum, terminate by reſolution, never, ſo far as I know, by ſuppuration, if they be properly treated. From whence it appears, that the matter of them is mobile and ſoluble. Laghi, however, obſerved, that young people previous to puberty, and thoſe advanced in life, were not liable to this metaſtaſis ‖; and that women, although they were ſeldom attacked with theſe ſwellings, on the ſub-

ſiding of the ſwelling were ſeized with pains of the loins and pubes, juſt as if the catamenia were about to appear; which either broke out prematurely, or, in place of them, unuſual itching and a ſenſe of heat were felt in the pudendum §.

* *Epid. Stat.* 3. † L. c. ‡ *Journ. de Med.* T. vii. ‖ L. c.

§ In the Medical Journals publiſhed this very year (1785.), by Botoni, this complaint is twice or thrice mentioned as having been tranſlated to the teſticles in men, and to the groin in female patients.

360. It is likewiſe worthy of remark, that a good many patients, both male and female, as the diſeaſe advances, or when it begins to take a turn, or has already done ſo, are occaſionally troubled with frequent vomiting, and continually diſtreſſed with it for ſome days; which was firſt noticed by Laghi *, and has lately been confirmed by my own obſervation. Thoſe perſons in whom this vomiting occurs, although their tongue be clean, the taſte of their mouth not bitter, and their appetite not impaired, while no vitiated fluid is thrown up, but merely the meat and drink, are generally freed from the anxiety and reſtleſſneſs which they experience after taking meat or drink; which circumſtance gives reaſon for ſuſpecting that the vomiting is rather referable to ſpaſms of the ſtomach, than to a vitiated ſtate of the chyle. In fact, paregorics and ſtomachics, both internal and external, and the mildeſt

clyſters, are the only means which gradually remove it; there is very ſeldom occaſion for cathartics. But Laghi mentions that vomiting alſo occurred in thoſe perſons in whom no tranſlation to the teſticles took place †; and he therefore conjectures that it depends upon the metaſtaſis. Which though I allow may ſometimes happen, ſtill I cannot be induced to believe that the metaſtaſis to the ſtomach is always its cauſe; becauſe I have ſometimes ſeen it come on when the ſwelling not only continued, but even proceeded to increaſe. Others, on the ſwelling diſappearing, are attacked with an headach, not unlike a periodical hemicrania, which to a certainty goes off on the ſwelling of the ſcrotum or teſticles ſupervening ‡. But when neither of theſe accidents happens, frequently the morbid humour being directed towards the breaſt, a cough ariſes. Whatever part of the body is attacked by the violence of the diſeaſe, the fever immediately increaſes, accompanied with thirſt, watching, anxiety, and conſtant toſſing of the body ‖.

* L. c. † *Id. ib.* ‡ *Id. ib.* ‖ *Id. ib.*

361. Beſides theſe kinds of metaſtaſes, that which has been mentioned by Pratolong is the moſt ſingular *. For he mentions that upon thoſe tumours an anaſarca ſupervened, completely like that which ſometimes ſupervenes upon ſcarlet-fever, attended with the greateſt difficulty of

breathing, and acute fever. Hence he ſuſpects that the ſwelling of the parotids may be claſſed among the *eruptive fevers*, or febrile exanthematic diſeaſes. For this ſuſpicion ſeems to have a great appearance of truth, if we turn our attention to the preceding or concomitant diſeaſes, which are generally exanthematic or eruptive †; as alſo to the nauſea, vomiting, ſighing, anxiety, debility, tendency to fainting, watching, reſtleſſneſs, and ſimilar ſymptoms which are conjoined with this diſeaſe, and are in common to it and the eruptive diſeaſes. This ſuſpicion receives ſtrength and ſupport from the opinion of certain authors, and the common perſuaſion of the vulgar, that the complaint is communicated by contagion. To this opinion Laghi himſelf was in ſome meaſure diſpoſed, though a man of the utmoſt judgment and caution; for, while he inveſtigates its cauſes, he ſeems inclined to believe that the epidemy, of which he has given ſo ample an hiſtory, was brought to us by the winds from Africa, where the diſeaſe had prevailed peſtilentially. Be this as it may, it is very much to be wiſhed that phyſicians of eminence would turn their attention to the true nature of this diſeaſe, and determine, by repeated experiments, whether it belongs to the eruptive or contagious diſeaſes, as they are called, or not.

* *Epiſt.* cit. His words are: "The only complaint which can be ſaid at preſent to be epidemic in this city, is that

which goes under the name of *gotazze*, or the diſeaſe of the cheeks, which is called by the Florentines *the diſeaſe of the ears*. In which, beſides the parotids, the genital parts are enormouſly ſwelled, with conſiderable fever, and in ſome others I have ſeen upon the parotid ſwelling an anaſarca ſupervene, in every reſpect like that which ſometimes ſupervenes upon ſcarlatina, with a very great difficulty of breathing, and an acute fever. Do you believe, Sir, that this diſeaſe can be claſſed among the eruptive fevers?"

† In the year 1753, the epidemic ſwelling of the parotids at Bologna was preceded by the petechial diſeaſe and ſmall-pox, with which ſometimes a ſwelling of the parotids was conjoined. After the petechiæ and ſmall-pox had ceaſed, the ſwellings of the parotids alone began to prevail epidemically. In the diſeaſe which in the year 1782 not only prevailed in certain diſtricts, but alſo here at Milan, the meaſles firſt aroſe ſporadically, and afterwards epidemically. Theſe ſwellings of the parotids prevailed at the ſame time at Genoa, as I have already ſaid, and at Turin. I do not know, however, whether the eruptive diſeaſes prevailed there at the ſame time.

362. In the epidemy which I have already mentioned as having prevailed in the year 1782 in common to us with the inhabitants of Genoa and Turin, no metaſtaſis to the teſticles was obſerved, as elſewhere; but, in place of it, very frequently moſt of the patients were haraſſed with a troubleſome vomiting, accompanied with a ſenſe of weight at the epigaſtrium, after the tumours and fever were already diſcuſſed; which ſeems to confirm the opinion of Laghi, that the vomiting had ariſen in them from a metaſtaſis, as he had obſerved in his patients at Bologna (360.). I therefore think that the vomiting which

occurs at the beginning of the diſeaſe, or at its height, is to be diſtinguiſhed from that which comes on at the concluſion of the diſeaſe. It is probable that the former depends upon the derangement and dilatation of the nerves, ſuch as uſually takes place in the exanthematic diſeaſes; and that the latter is occaſioned by a metaſtaſis. For patients affected with the latter in not a few inſtances have been reſtored by gentle and repeated purging, by which thoſe labouring under the former are more and more deranged. The diſeaſe appeared among us in the month of March, after a great fall of ſnow and ſudden froſt. The parotid and maxillary glands ſwelled enormouſly, and became tenſe and remarkably hard. They were not, however, very painful. The colour of the ſkin was ſcarcely changed; and if any redneſs appeared externally, it was extremely ſlight. But they were accompanied with a conſtant, irregular, and generally violent fever, except a few patients, who were more ſlightly affected. Thoſe who were more ſeverely affected, laboured under debility, nauſea, vomiting, frequent ſighing, and a tendency to fainting, particularly in the erect poſture. At the beginning, gentle cathartics, clyſters, diluent and diaphoretic drinks, and bleeding, were not omitted; the blood, however, was covered with no inflammatory gluten, which is generally wanting in theſe diſeaſes; as alſo ap-

pears from the obſervations of others. The diſeaſe goes through its ſtages generally in eight or nine days, and is reſolved either by a diarrhœa, or ſweat, or diſcharge of urine, or by an epiſtaxis. In children and young people a diſcharge of blood from the noſe occurring on the fourth or ſeventh day, at Bologna, was generally obſerved to effect a true criſis, by which they were immediately reſtored to health *. It does not appear that any perſon ever died of this diſeaſe, however violent in degree †. But nobody ought to raſhly rely upon himſelf, and deſpiſe the diſeaſe on account of its mildneſs, as a fatal tranſlation to the lungs or brain may occaſionally occur ‡.

* Laghi, l. c. † *Id. ib.*

‡ At the ſame time that the diſeaſe prevailed at Milan, it likewiſe occurred epidemically at Magenta. I hope it will not be conſidered as ſuperfluous, ſhould I here tranſlate the deſcription of it, ſent to me on the 6th of June 1783, by Berretta, the phyſician of the place. "It is very true, as you have been informed, that laſt year, about the beginning of the ſpring, not only here, but in ſeveral of the adjacent diſtricts, an epidemic diſeaſe, affecting the parotid glands with ſwellings, prevailed. The diſeaſe was named by the common people *la ſgualtera*; concerning which a phyſician is ſcarcely ever conſulted. I ſhall mention, however, both whatever I myſelf had an opportunity of obſerving, as well as what I could collect by the moſt careful inquiries of thoſe who were attacked with the diſeaſe. The ſymptoms which I obſerved to precede and accompany this ſwelling of the parotids were almoſt always pains of the joints and remarkable laſſitude of all the limbs. No

ſymptom ever occurred to me which was peculiar to the exanthematic fevers. I except the caſe, however, of a boy of twelve years of age, who, before his parotid glands had begun to ſwell, was diſtreſſed for nearly three days with frequent bilious vomiting, anxiety, reſtleſſneſs, and, at the ſame time, conſiderable fever, which diſtreſſed him for ſome time, even after the appearance of the ſwellings. The fever ſometimes preceded, ſometimes followed theſe tumours, at other times was conjoined with them. When the fever ſupervened, it never continued leſs than three days, and never more than eight; nor did the tumours always diſappear completely, but, after the fever had been intirely diſcuſſed, they ſtill continued for ſome time. Thoſe who were ſeized with the tumour and fever at the ſame time generally complained of pain of the throat, difficult deglutition, and arthritic pains over the whole body. The few patients who applied to me for advice were treated with bleeding, when the ſtrength of the body and violence of the fever required it, with cathartic ſalts, and the copious drinking of an infuſion of elder-flowers, to which nitre had been added; and I promoted the diaphoreſis the more willingly, becauſe I obſerved the fever generally reſolved by copious ſweats. I applied externally to the tumours an emollient cataplaſm compoſed of milk, elder-flowers, and the flour of lint-ſeed; by the proper continuation of which they were almoſt always ſucceſsfully reſolved. But if they continued obſtinately, I then employed a reſolving liniment, compoſed of ſpermaceti and camphor, to which they at once completely yielded. For I never obſerved them terminate in ſuppuration, or in any other way, nor by a metaſtaſis," &c.

363. Some ſpecimen of this epidemy (362.) will be afforded by two hiſtories, the one of which exhibits a view of the more violent ſpecies of the complaint, the other of the milder kind. A young man of twenty-three years of age, of the ſanguineo-

melancholic temperament, who was accuſtomed to continual expoſure to the cold, winds, and night air, was attacked with this complaint. On the *firſt* day, the parotid glands began to ſwell and grow painful, without manifeſt fever. On the *ſecond* day, their ſwelling was increaſed, and, at the ſame time, the maxillary glands became ſwelled, accompanied with ſlight fever, in conſequence of which he was obliged to betake himſelf to bed. On the ſame day, he took the *ſal catharticus amarus*, by which he was well purged. On the *third* day, after the fever had increaſed, attended with a ſtrong and great pulſe, frequent ſighing, and anxiety, and toſſing of the whole body, accompanied with pain, and ſome redneſs of the ſkin, he was bled in the arm, to the extent of ten ounces, which exhibited no inflammatory diatheſis. After this the fever remitted ſomewhat, but not the tumours, which, on the contrary, increaſed until the fifth day. In the mean time his appetite was good, he ſlept well, and, while he lay in bed, ſeemed to have ſufficient ſtrength. He only complained of occaſional languor at the ſtomach, and, if he roſe out of bed, a tendency to fainting. On the *fifth* day, a gentle cathartic was again adminiſtered to him, but without effect. In the evening the fever was aggravated, without any ſymptom of cold or ſhivering. He had a reſtleſs night. In the

morning of the *ſixth* day the fever was very violent, he complained of great heat internally, and, moreover, was diſtreſſed with ſighing, nauſea, reſtleſſneſs, thirſt, and headach. The arteries beat violently. Ten ounces of blood were therefore drawn from the other arm, in which, however, nothing morbid appeared. In the evening he twice vomited whatever he had eaten or drunk, after which he was ſomewhat relieved, and began to remain quiet. In the morning of the *ſeventh* day, the fever was leſs, the head free, and the face and parotid glands leſs ſwelled; but frequent vomiting occurred after drinking, which, however, brought off nothing except what had been drunk, which was ſometimes mixed with a little yellow bile. In the evening the ſame vomiting occurred. By repeated injections of oil the bowels were relaxed, and natural ſtools paſſed. After this the vomiting was gradually allayed; ſo that upon the night of the *eighth* day, reſt and tranquil ſleep followed. Upon the *ninth* day, all the ſymptoms were a great deal better, the patient being almoſt intirely free from fever. Upon the *eleventh*, the tumours almoſt intirely diſappeared. The patient was allowed for drink an infuſion of tea-leaves, lemonade, and purified whey; but every kind of drink deranged the ſtomach and occaſioned vomiting. Externally, emollient fomentations were employed, until the ſecond attack of the fever. It was then conſidered as adviſeable to abſtain

from all topical applications, which appeared not to be attended with ſucceſs. The reſolution was completed by the gentle motion of the fever, by the ſpontaneous vomiting, and by the looſeneſs obtained by injections, together with a copious diſcharge of urine, rather than of ſweat. Ten or twelve days afterwards, a man of ſixty years of age, who had conſtantly attended this patient, after walking ſome time—contrary to what he had for ſome time been accuſtomed to do—in the open air, was attacked with a ſlight ſwelling of the left parotid gland, accompanied with moderate pain. On the *ſecond* day, the pain was increaſed, and ſtretched to the ear, impeding manducation. Upon the following night, the pain becoming more diſtreſſing prevented the patient from enjoying almoſt any ſleep. Wherefore, on the *third* day, although he was free from fever, he was obliged to remain in bed. He was purged by means of a gentle cathartic, and blood was drawn from the arm, which was found very firm and denſe. The pain was greatly mitigated by the bleeding. The part affected with the pain was defended from the cold and external air by the application of a linen cloth. Only once during the night, when the pain was very urgent, a bread-and-milk poultice was applied, in conſequence of which, not only the pain, but the ſwellings were allayed. In ſix or ſeven days he almoſt intirely recovered, nothing remaining but ſome difficulty of chewing,

which continued for a few days. The complaint did not pafs, as it generally does, from one parotid gland to the other. Vomiting, anxiety, and fever were abfent; nor did the tumour grow to fuch a fize as I had obferved it in others. Probably the predifpofing caufe being lefs in degree rendered the difeafe lefs fevere.

364. In the beginning of September, in the year 1783, this complaint again appeared; but as a fporadic, attacking thofe perfons principally who had incautioufly expofed their head and neck to the moift cold air, efpecially of the evening; but it was generally mild. A young man of the fanguineo-phlegmatic temperament, and of a corpulent habit, after having been engaged a confiderable time writing in the evening, having thrown open the windows on one fide of him during damp cold weather, fhortly perceived a flight pain in the left parotid gland. The pain increafed at night. He applied a bag containing tepid flour. Next morning the parotid appeared very prominent, its colour was almoft natural, and it was not very hard; nor was the pain very great; a particular uneafy fenfe of tenfion, however, was felt, extending to the neighbouring parts and head; but there was ftill no fever. His phyfician advifed him to defend the parotid from the cold air, to fpeak little, to abftain from chewing, and pretty frequently to drink an infufion of

elder-flowers, and occaſionally to take a few ſpoonfuls of a mixture compoſed of nitre, rob of elder-berries, and ſyrup of raſp-berries, and at the ſame time to promote perſpiration by the heat of the bed. In the evening he was feveriſh; at night he ſweated and ſlept well. Next morning the tumour appeared to have ſpread. His pulſe was frequent. The other ſymptoms continued the ſame. He enjoyed a calm night's reſt. Upon the *third* day, in the morning, the parotid gland had conſiderably ſubſided. A gentle cathartic was then given, compoſed of the *ſal mirabilis* and ſyrup of manna, by which the belly was twice purged. In the evening he felt himſelf better. In the morning of the *fourth* day the pulſe was natural, the urine deep coloured, the tenſion and ſwelling much leſs. On the *fifth* day the ſwelling diſappeared intirely. Upon the *ſixth* he began to move abroad. No vomiting nor metaſtaſis to the teſticles followed. But not a few other patients, at that time labouring under this kind of ſwelling, on its diſappearing were diſtreſſed for ſome days with vomiting; although they all of them ſhortly recovered.

365. From what has already been ſaid, I think that the nature of this diſeaſe, and the plan of treatment adapted to every degree of it, ſufficiently appear. For, while I delivered its deſcription and traced its progreſs, I did not omit the

particular remedies which experience has ſhewn to prove ſerviceable, according to the nature of its ſymptoms, or their variations. For no perſon will take upon him to doubt that it is a ſwelling of the lymphatic glands. But whether unuſual tenacity of the lymph alone, or its motion being retarded, or any foreign body being combined with it, be the cauſe of the complaint; or whether expoſure to the cold and moiſture of the air, either by corrugating the lymphatic veſſels and glands, which are not ſufficiently covered, or by ſuppreſſing the perſpiration, ought to be conſidered as an occaſional cauſe only, or as the efficient one, every body is at liberty to judge for himſelf: as the ſubject is ſtill involved in great obſcurity, and requires many more obſervations than writers have hitherto left us, before we can determine the point.

CHAPTER XVI.

OF GLOSSITIS, OR INFLAMMATION OF THE TONGUE.

366. We are informed by Vogel, that the tongue becomes inflamed and ſwelled of itſelf, that is to ſay, unconnected with angina and other

diſeaſes, conſtituting a dangerous, acute, and primary diſeaſe, and that within a ſhort time, namely, within five or ſeven days, it occaſions ſuffocation *. He named it *gloſſitis*, and mentions his having treated it twice. But before his time ſeveral other authors had made mention of inflammation of the tongue, and the various ſwellings to which it is ſubject, particularly Sennert † and Riverius ‡, the latter of whom has written an expreſs chapter on the ſubject. A fever comes on, accompanied with cold, immediately followed by exceſſive heat; which is a mark in common to other acute diſeaſes. But while the febrile cold is ſtill preſent, the tongue is ſuddenly affected with pain, redneſs, heat, and ſwelling, which increaſe more and more. Difficulty of ſpeaking and ſwallowing ſhortly ariſe, gradually increaſing to ſuch a degree, that the power of both are loſt. There is a ſpontaneous diſcharge of thick, glutinous ſaliva; the face is red, the head pained, and the patient diſtreſſed with almoſt conſtant watching. The tongue being very much ſwelled, cannot be moved at all, nay, on account of its increaſed bulk, it is thruſt out of the mouth. As the patient can neither eat nor drink, he is haraſſed with craving hunger and great thirſt. And the breathing becoming gradually more difficult, at length threatens actual ſuffocation.

* *De Cogn. et Cur. Morb.* § 180. † *Med. Pract.* T. i. *Oper.* T. ii. l. i. P. 3. ſect. v. c. 2. p. 333. ‡ *Prax. Med.* l. v. c. i. p. 86.

367. The inflammation of the tongue is doubtleſs attended with very great danger; for, if it be not quickly reſolved, or if it do not terminate in an abſceſs, which is quickly to be opened, by obſtructing the breathing it occaſions a moſt miſerable death. This ſhocking cataſtrophe, therefore, muſt be prevented as ſpeedily as poſſible. All the more active remedies for diſcuſſing inflammation muſt be called to aid, and blood muſt be copiouſly drawn, particularly from the jugular or ſublingual vein, and it muſt be frequently repeated, as occaſion may ſerve; bloody cupping-glaſſes muſt be applied to the back; the belly muſt be briſkly purged, or at leaſt injections muſt be thrown up four times a-day, and the neck ſurrounded with proper cataplaſms. In the mean time, if poſſible, the mouth muſt be waſhed frequently with an emollient decoction, compoſed of milk and honey. Concerning primary inflammation of the tongue, let theſe obſervations ſuffice. The ſecondary ſpecies, which ſupervenes on other diſeaſes, or is conjoined with angina, will be diſcuſſed elſewhere. Nor is it of any conſequence for me here to treat of other diſeaſes of the tongue, as its enlargement, œdema, ſwelling, ulcers, fiſſures, and cancers, as writers upon ſurgery take all theſe affections into conſideration.

CHAPTER XVII.

OF ANGINA.

368. THE complaint named by the Greeks συνάγχη, or κυνάγχη, is called by the Latins *angina*. The former derive the name from an halter, as if they named it ſuffocation; the latter derived it from *ango*, to *ſuffocate*. They formerly employed this word to denote nearly the compreſſion of the fauces and throat, and therefore the greateſt difficulty of breathing, as appears from the works of Aretæus * and Cœlius Aurelianus †; afterwards they transferred it to denote at the ſame time difficulty of ſwallowing ‡.

* *De Cauſſ. et Sign. Morb. Acut.* l. i. c. vii. † *Acut. Morb.* l. iii. c. 1. ‡ Corn. Celſus, l. iv. c. 4.

369. All agree that this is a very acute diſeaſe. But authors are not agreed whether or not it always depends on inflammation; for Cœlius Aurelianus, in treating of it, avowedly excludes fever from angina *. Aretæus alſo at one time aſcribes it to inflammation, at another time to other morbid affections †. Hence, induced by the authority of the ancients, as well as by that

of ſucceeding writers, I do not heſitate to ſuppoſe that there are various kinds of angina, which differ both in their nature and ſeat; and this I do the more confidently, becauſe the great Boerhaave, to follow whoſe opinion it is an honour ‡, had a ſimilar view of the ſubject. I ſhall therefore firſt define what I conſider angina to be. I give the name of *angina* to that affection of the fauces, larynx, pharynx, and neighbouring parts, which, in a remarkable manner, injures the power of reſpiration or deglutition, or both together, on account of ſome impediment ſituate in the fauces. By which definition it is eaſily diſtinguiſhed from other kinds of difficult reſpiration, or deglutition, the cauſe of which is not ſituate there, but which immediately proceed from morbid affections of the breaſt or œſophagus; as in them no ſenſe of ſtrangulation or pain is perceived at the fauces.

* L. c. † L. c. ‡ *Aphor. de Cogn. et Curand. Morb.* § 783. *et ſeqq.*

370. Hence we proceed to the varieties of the complaint. As this affection, therefore (369.), ariſes from different morbid affections of theſe and the neighbouring parts, namely, from inflammation, catarrhal obſtruction, œdema, ſwelling, abſceſs, ſcirrhus, ſpaſm, palſy, phagedenic ulcer, aphthæ, gangrene, and from the adheſion of foreign bodies, various ſpecies of angina may be eſtabliſhed,

as the inflammatory, catarrhal, œdematous, apoſtematous, malignant, gangrenous, ulcerous, aphthous, convulſive, paralytic, ſcirrhous, accidental, and ſo forth. The variety of the parts affected alſo gives riſe to various diſtinctions. Hence it is divided into *external* and *internal;* the former is named by ſome of the moderns by the particular appellation of *paraſynanche*, namely, when it affects the external parts of the pharynx: but when it affects the external parts of the larynx, it is named *paracynanche.* While they tell us that the internal ſpecies of the complaint, affecting the pharynx, is to be named *ſynanche*, and, when it affects the larynx, *cynanche.* Although it is proper to obſerve that the ancients employed theſe terms intirely differently; for they named that affection *cynanche*, or *canine angina*, in which the fauces, tongue, and face became ſwelled; and that *ſynanche*, which ſuffocated the patient without any external mark of diſeaſe. Hence the former was conſidered by them as *manifeſt*, and the latter as *occult* and lurking; and, next, they were accuſtomed to denominate the ſlighter, or *ſpurious angina*, by the term *paraſynanche.*

371. Having premiſed theſe remarks concerning the meaning of the terms, according to the ancients and moderns, it is proper briefly to enumerate the remote cauſes which generally give riſe to angina. Such, in particular, are the ſup-

preſſion of the ſweat, inſenſible perſpiration, and of every other cuſtomary evacuation; ſudden changes of the weather, or the tranſition from a warm to a cold ſituation; violent exerciſe; riding againſt the wind; great ſtraining of the voice; vociferation; declamation; the blowing of trumpets, particularly in cold air; violent coughing, or frequent vomiting; the uſe of mercury; the exhalation ariſing from the lime of newly-plaſtered walls; the ſwallowing or inhaling of acrid poiſons or medicines; a tranſlation occurring in acute, malignant, or exanthematic diſeaſes; a peculiar ſtate of the air; an epidemic miaſma; the repelling, or ſpontaneous retiring, of eryſipelas, gout, or arthritis; ſcorbutic, venereal, and ſtrumous affections, as well as thoſe proceeding from a bad ſtate of the fluids, hyſteria, and hypochondriaſis; nervous affections; any tumour internally or externally growing to the fauces, as ſcrofula, excreſcences, ſarcoma, polypi, membranes, bronchocele, ſwellings of the parotids, and other kinds of tubercles; ſharp-pointed things, ſmall bones, and other ſmall bodies, falling into the fauces, or adhering there, or entering, drawn, or forced into the larynx, or remaining in the pharynx or beginning of the wind-pipe, and by their bulk obſtructing the paſſage, preſſing upon it in all directions, and irritating it; the induration, ulceration, or deſtruction of the epiglottis; luxation of the os hyoides, or vertebræ of the neck,

in young people. For from theſe cauſes almoſt every kind of angina ariſes. According to the variety of the cauſes, the part affected, the degree of violence, and ſymptoms, the nature of the complaint varies, as well as its danger, and the method of treating it; which will appear more clearly from the particular deſcription of each of the ſpecies, to which I ſhall now proceed.

THE INFLAMMATORY, OR TRUE AND LEGITIMATE, ANGINA.

372. THE difficulty of reſpiration, or deglutition accompanied with pain, heat, and ſwelling, which is occaſioned by inflammation of the fauces and neighbouring parts, is named *inflammatory angina*, and by others *true* and *legitimate angina*. In it, ſometimes the velum pendulum, uvula, tonſils, muſcles of the os hyoides and jaw, and root of the tongue; ſometimes the pharynx and upper part of the œſophagus; ſometimes the larynx and beginning of the aſpera arteria, are inflamed. Sometimes, alſo, ſeveral of theſe parts are affected at the ſame time.

373. When the velum pendulum, uvula, tonſils, root of the tongue, together with the muſcles, glands, and membranes of theſe parts, are affected with inflammation, and the complaint extends to the confines of the nares and Euſtachian tube, not only a continued and violent fever, at-

tended with redneſs of the face, comes on, but likewiſe, if the fauces be examined with the mouth open and the tongue depreſſed, ſwelling and a blood-red colour appear in every part that admits of being inſpected, which is likewiſe conſpicuous externally under the jaws; a great degree of pain is felt in the ſame part; the deglutition is performed with the greateſt difficulty and pain; the breath alſo is drawn with difficulty, and is in ſome meaſure impeded; the fauces are either parched or obſtructed with a viſcid and tenacious phlegm, and the mouth can ſcarcely be opened; the part where the inferior jaw is inſerted in the temporal bone is frequently painful and ſwelled, and an acute pain is generally propagated accompanied with an uneaſy tinnitus to the internal ears. This laſt ſymptom often occurs in thoſe who labour under lues venerea, as Boerhaave, in particular, affirms *.

* L. c. § 805.

374. If the pharynx and upper part of the œſophagus be affected with inflammation, this affection at once appears on inſpection of the throat; the reſpiration is not impeded; but ſwallowing is ſcarcely practicable, and excites an acute pain; not only on account of the ſwelling of the parts through which the ingeſta paſs, and the exerciſing of their action, but alſo on account of the diſtraction which the pharynx ſuffers while in the effort of ſwallowing; the larynx, os hyoi-

des, and baſe of the tongue, are drawn upwards and outwards by the ſtylogloſſi and geniogloſſi muſcles of the tongue, by the geniohyoidei and mylohyoidei of the os hyoides, and by the hyothyroidei and cricothyroidei of the larynx: which action, while it is performed, likewiſe cauſes ſome violence to the pharynx. Hence the things to be ſwallowed, on account of the pain and ſwelling of theſe parts, are repelled to the internal paſſages of the noſe, from whence they again come out, or, being forced or falling into the glottis, occaſion a violent cough. On which account the want of both meat and drink parches the fauces and body, vitiates the fluids, and aggravates the fever itſelf.

375. But when the larynx itſelf, particularly the glottis and internal parts, all the way to the trachea, are affected, the voice becomes very ſhrill; a dry and almoſt ſuffocating cough comes on; a moſt ſevere pain is felt during deglutition, not in conſequence of the deglutition, which is then generally free, but in conſequence of the motion of the larynx, which muſt then be raiſed; and this pain becomes much more acute when the patient is obliged to ſpeak or to roar; the muſcles of the larynx and glottis, which are affected with inflammation, acting in ſuch a variety of ways; the reſpiration becomes ſmall, ſlow, ſtertorous, and ſuffocating; and it is

generally very quickly ſucceeded by death, in conſequence of the breathing being interrupted, although it be unattended with any evident external marks of diſeaſe, excepting prominent and horrible eyes.

376. But if the inflammation attack the aſpera arteria, or trachea, rather than the larynx, in that caſe alſo no mark of diſeaſe is obſervable in the fauces; nor does any thing appear externally, becauſe the ſwelling, pain, heat, and redneſs, take place in the internal cavity. But the paſſage of the trachea, when touched, is affected with more ſevere pain, by which chiefly the ſeat of the complaint is detected; the fever becomes exceedingly acute; the ſeverity of the pain is increaſed by inſpiring; the cough is generally exceedingly troubleſome, and the voice is clangous and hoarſe; the reſpiration is ſmall, frequent, high, and performed with a great effort and hiſſing. Hence a fatal accumulation of blood within the lungs very quickly takes place; its return from the head and brain is retarded or prevented; the face becomes ſwelled, livid, and red; the pulſe is ſurpriſingly weak and variable; and the greateſt degree of anxiety, ſuffocation, and death, very quickly cloſe the ſcene, but not ſo ſoon as in the caſe of inflammation of the larynx, glottis, and epiglottis, becauſe the paſſage of the glottis, being narrower, is ſooner cloſed up.

377. The more parts become inflamed (373.

to 376.), the more ſevere and fatal are the ſymptoms which follow; inſomuch that the whole face, lips, and eyes, become ſwelled and red; the tongue is thruſt out of the mouth; all the ſenſes become dull; and the patient, in the midſt of ſnoring, delirium, convulſions, and fainting, is ſuffocated in the moſt miſerable manner. According to the diverſity of the parts affected, angina receives a particular name. Hence ariſe the terms of *angina tonſillaris*, *pharyngea*, *æſophagea*, *laryngea*, *trachealis*, and the names compounded of theſe.

378. The perſons moſt liable to the inflammatory angina are thoſe in the prime of life, of the ſanguine temperament, and a plethoric habit; who are much devoted to rich living, or to uſing vinous liquors, and who are accuſtomed to exerciſe and hard labour, on which account men are more liable to the complaint than women, particularly thoſe with yellow or brown hair, and who may have already once laboured under the complaint. If it do not ſuffocate the patient, which generally happens on the fourth day, but ſometimes much ſooner, it terminates like other inflammations by reſolution, namely, by a copious diſcharge of viſcid ſaliva, by ſweat, by a copious diſcharge of concocted urine, or by abſceſs, gangrene, or ſcirrhus *. That which has been deſcribed (373.), and affects the upper

part of the fauces, threatens conſiderable danger; which is much greater, however, when all theſe affections are ſeated behind the velum pendulum (374.), and may be obſerved by preſſing down the tongue, and opening the mouth wide, on account of their lying lower down.

* Vol. i. *Com. on Inflam.* par. 62.

379. The patient's immediate death may be expected, if the neck or fauces exhibit no ſwelling or redneſs, while in the mean time the moſt excruciating pain, ſuffocating reſpiration, a ſhrill and acute voice, ſnoring, and highly raging fever, together with the other ſymptoms already enumerated (375. to 377.), threaten to cut off the patient in a few hours. The author of the *Coacæ Prænotiones* mentions, that theſe angina cut off the patient upon the ſame day, or at fartheſt on the third day. His words are: "Thoſe anginæ which exhibit no evident mark in the neck or fauces, induce violent ſuffocation, and difficulty of breathing, and prove fatal on the ſame, or on the third day *." This is confirmed by Hippocrates elſewhere, who aſſerts: "That theſe anginæ occaſion ſuffocation upon the firſt, ſecond, third, or fourth day." His words are: "Thoſe anginæ are moſt alarming, and moſt quickly prove fatal, which are accompanied with no evident mark either in the fauces or neck: but they are attended with a great deal of pain, and admit of reſpiration when the neck is kept erect,

For they prove fatal upon the firſt day, as alſo upon the ſecond, third, or fourth †."

* *Lib.* v. n. 4. *Ex Jacotii reſenſione, et editione.* † *Prænot.* n. 132. *Lind. edit.* Lug. Bat. 1665; or *Prænot.* n. 23. *edit. Marinellian.* which is probably the moſt convenient, as being in the hands of almoſt every body, or is eaſily procured. *N. B.* But when I merely point out the numbers for the ſake of brevity, it may be proper to obſerve, that I employ the edition of Linden, which I have quoted.

380. When the ſwelling and redneſs diſappear without favourable marks, and when they are not directed outwards, and the pus is not diſcharged with eaſe, nor without pain, or when theſe changes do not take place upon the critical days; likewiſe when the pains ceaſe without an evident cauſe, or are transferred to the head without a criſis, or any alleviation of the fever having taken place, it is a very unfavourable mark *. It is an equally unfavourable ſymptom, if, without a criſis occurring, a pain in the præcordia ſupervene, conjoined with debility and torpor; for it gradually occaſions the patient's death, who otherwiſe feels himſelf tolerably well †. Likewiſe the tranſlation of angina to the lungs is alarming, as it cuts off the patient in *ſeven days*; but if the patient ſurvive that period, ſuppuration takes place ‡, "unleſs the collection of phlegm be not brought up ‖." Again, "perſons labouring under angina, if they do not quickly ſpit out concocted matter, are in imminent

danger §." But the expectoration ought to be neither viſcid, nor thick, nor whitiſh, nor brought off with great violence, otherwiſe it denotes an unfavourable ſymptom ¶.

* *Coac.* n. 365. 370. 372. *Prænot.* n. 135. † *Coac.* n. 374. ‡ Hippocrat. aphor. x. ſect. v. || *Coac.* n. 367. § *Coac.* 377. ¶ *Ibid.*

381. It has juſt now appeared from the prognoſtics of Hippocrates, that the tranſlation of angina to the head, lungs, and hypochondres, generally occaſions death. Their truth is confirmed by the obſervations of all ages; but the facts which Van Swieten, Boerhaave's commentator, has adduced from his own experience in confirmation of them, are particularly worthy of peruſal *. But we muſt not only conſider thoſe metaſtaſes as pernicious, but likewiſe ſuch as take place to other parts, excepting thoſe which take place to the ſurface. Thus the author of the *Coacæ Prænotiones* obſerves: "Thoſe pains in angina, which paſs to the legs without advantage (or, as others tranſlate it, *without ſymptoms*), accompanied with fever, are mortal †. And again: "In angina, all thoſe ſymptoms are fatal, which do not cauſe the painful affection to ſtrike out. Moreover, complaints of long duration proceed to the legs, and are difficultly and painfully converted into pus ‡." Nor is the tranſlation of the complaint to the inteſtines, inducing a diarrhœa, always ſalutary ||. But it is ſaid to

be a much more desperate symptom, when the fæces are suddenly forced out in angina, in consequence of violent strangulation §; as it implies exhaustion of the strength. Moreover, when the pains cease without a cause (as I have already observed in paragraph 380.), it is a proof of the immediate approach of death ¶. For it is easily understood from the loss of sense, that they are succeeded by gangrene. Likewise the symptomatic angina which supervenes upon exanthematic and malignant fevers, generally proves fatal. Sometimes, however, it has not appeared so bad, particularly in the small-pox, if upon its arising the delirium cease; but it occasions greater danger in measles and other exanthematic diseases.

* *In aphor.* Boerh. § 809. n. 5. † Cap. xv. n. 12. *Ex Duret. edit.* vel. n. 373. Lind. edit. † *Ib.* n. 15. vel n. 376. *ed. Lind.* ‖ *Coac.* n. 373. § *Coac.* n. 368. vel cap. xv. n. 7. *Duret. ed.* ¶ *Coac.* cap. xv. n. 9. *Duret. ed.*

382. If these symptoms (379. to 381.) be wanting, or the opposite of them occur, hopes of recovery remain. Hence Hippocrates observes: "If a swelling take place in the neck in angina it is a favourable symptom, for the disease passes outwards *." He likewise for the same reason asserts that it is favourable if a swelling and redness appear on the breast. It is every where pronounced as safer in the *Coaca Præsagia* and *Prænotiones*, if the swelling, redness,

and abſceſs verge upon the moſt external parts ‡, particularly if they do not return to the internal parts ‖. The diſeaſe is frequently relieved by a diſcharge of blood from the noſe, uterus, or hemorrhoidal piles, or by a bilious diarrhœa, or by ſweat, if ſymptoms of concoction from the urine have preceded, and marks of a good criſis be not wanting. Nor is the pain of the joints which ſupervenes always unfavourable, providing that in conſequence of it the angina and its own ſymptoms be mitigated by it.

* Aphor. 37. ſect. vi. † Aphor. 49. ſect. vii. ‡ *Coac.* n. 365. *Prænot.* n. 136. ‖ *Coac.* n. 365. *Prænot.* n. 134.

383. From theſe obſervations, therefore (382.), as well as from the remarks already delivered concerning the reſolution of every inflammation, it will appear whether or not angina will be reſolved. It will appear that ſuppuration has commenced, if the fever, which was violent, and attended with exacerbations, gradually remit without ſymptoms of reſolution or any criſis, and if the pain, from being acute and throbbing, be changed into an obtuſe and heavy one; while the ſwelling, if it can be examined by the hand, fingers, or by a probe, acquires a particular fluctuating ſoftneſs; and, laſtly, if, while the tumour does not diſappear, the redneſs and inflammation in it, and about it, be very much diminiſhed. But when neither reſolution, nor

a metaſtaſis, nor any critical evacuation, nor ſuppuration, take place, and, on the other hand, the inflammation continues violent, with all its ſymptoms, there is reaſon to apprehend that gangrene is threatened. That it is already preſent, appears from the weakneſs, irregularity, and ſmallneſs of the pulſe; from the colour of the fauces being changed from red to livid, or black, or to a very white and pale hue; from the tumour ſubſiding, the pain ceaſing; from the fetor of the perſpiration; from the foul colour of the face; or from its being pale or livid; and from the coldneſs of the extremities. Still every gangrene ſupervening upon angina does not to a certainty prove fatal. Sometimes the gangrene ariſing from eryſipelas being forced by means of fever, and, as it were, by metaſtaſis to the fauces, and depoſiting a malignant and deleterious matter there,—which frequently happens,—affecting the palate, tonſils, and uvula at leaſt (parts which admit of being touched and examined), and which does not deſcend deep, nor ſpread too widely, does not reject every method of cure. Laſtly, angina terminates in ſcirrhous hardneſs, when being neither reſolved, nor having ſuppurated, nor being affected with gangrene, it leaves a ſwelling which is unaccompanied with pain, of a natural colour, hard, obſtinate, and reſiſting every remedy, unaccompanied either with fever, or any great difficulty of ſwallowing. The ſpecies of angina named *tonſilla-*

ris, *pharyngea*, and *œsophagea*, is principally subject to this evil; although the others do not seem exempt from this termination, which however happens less frequently.

* *Comment. on Inflam.* par. 62. *et seq.*

THE CURE.

384. As in the inflammatory angina, therefore, and particularly in that which affects the larynx and trachea, or which obstructs the fauces by the swelling, in such a manner as to deprive the patient not only of the power of swallowing, but also of breathing, in consequence of the passages being straitened, or impeded, every moment's delay may occasion the greatest danger; we must have immediate recourse to decided practice, that the inflammatory swelling may be as quickly as possible diminished and resolved, the motion of the blood being directed elsewhere, and its quantity diminished. After opening a vein, therefore, with all dispatch, the blood may be permitted to flow until the face, lips, neck, and eyes lose their intensely-red colour, and become, as it were, pallish; until the pulse subsides very much, both in greatness and quickness, as well as in point of strength; but it is not necessary, as some advise, to take such a quantity as to occasion fainting. Following the precepts of such persons too prema-

turely is not unattended with danger. It is neceſſary in this caſe to be ſure to let much blood; but the patient's age, temperament, habit of body, ſex, manner of living, and ſtrength, together with the climate, ought to be kept in view. In very plethoric and robuſt people, fifteen or twenty ounces, or even more, if taken from a large wound, will be ſufficient at one time, and ſo in proportion in leſs robuſt habits. It is a ſubject of controverſy from what part the blood ought to be drawn. When very great fulneſs of the veſſels is preſent, accompanied with an evident determination of blood from the lower parts of the body, as happens when the complaint ſuddenly ariſes after the ſuppreſſion of the catamenia, lochia, or hemorrhoidal flux, I ſhould agree with moſt practitioners in ſuppoſing that it is ſafer to open a vein firſt in the foot, and afterwards in the hand; particularly in thoſe perſons, whether male or female, whoſe peculiar idioſyncraſy appears to be ſuch, that they cannot bear bleeding in the upper extremities, without feeling their breaſt oppreſſed, or a ſenſe of weight in the head. The moſt uſual and moſt uſeful part from which the blood is drawn is the vein of the forearm, as being neareſt to the part affected; for it occaſions more revulſion; nor is it ſo apt as that which is drawn from the foot to occaſion a metaſtaſis of the morbific matter, which is frequently remarkably moveable, to the other viſcera,

and particularly to the lungs or abdominal cavity. But if the force of the diſeaſe remain unbroken, or again increaſe, the ſame bleeding muſt ſhortly afterwards be repeated, that the patient may be freed from the ſuffocation with which he is threatened. And this may be repeated as often as the indication points it out and the ſtrength bears it. But as the moſt violent angina very quickly of itſelf occaſions ſuffocation, Van Swieten therefore adviſes it, although then neceſſary, to be premiſed by pronouncing the event to be very doubtful and full of danger, leſt the patient's ſudden death ſhould unfortunately take place, and be aſcribed more to the remedy than to the diſeaſe itſelf *.

* On Boerhaave, § 809.

385. If the opening of theſe veins do not ſufficiently anſwer our expectations, or if the violence of the diſeaſe require a ſtill more efficacious remedy, blood ought immediately to be drawn, if poſſible, from the jugular vein; than which nothing is more efficacious for diminiſhing the congeſtion of blood in the neigbouring parts. For it does not occaſion *derivation*, as is commonly ſuppoſed, but *revulſion*, as the known diſtribution of the veſſels demonſtrates. But if this evacuation do not prove ſerviceable, or any thing prevent its being ſet on foot, it is moſt convenient and advantageous to open the ſublingual veins *, to fix cupping-glaſſes to the back or ſides of the

neck, or under the chin or ſhoulder-blades, after having previouſly ſcarified the ſkin deeply, to purge the belly by means of antiphlogiſtic cathartics, or at leaſt acrid clyſters, to immerſe the feet in warm water, and to rub them, as well as to apply irritating and rubefacient ſubſtances to the ſoles, to occaſion as powerful *revulſion* as poſſible. Moreover, the patient muſt be made to inſpire the vapour of warm water, to which ſome vinegar has been added, if it can be borne; care being taken that it may not be too warm, or of too irritating a kind. The throat ought rather to be wet with milk or tepid poſca, than waſhed with them, that the pain may not be increaſed by the gargling of it. The vinegar may be omitted when the pain is very ſevere, that the pain of the parts affected may not be increaſed by it. In the mean time the frequent drinking of a decoction of marſh-mallows, or of barley, or elder-flowers ought to be enjoined, that the fauces may be moiſtened, relaxed, and ſoftened; and all the fluids diluted and reſolved. With the ſame view alſo, oily, mucilaginous, refrigerant, anodyne, and ſlightly-ſweetened linctuſes are employed, of which the patient ought to lick ſome frequently. But when the ſwallowing is rendered freer, there is occaſion for the copious and frequent employment of warm, antiphlogiſtic, attenuant, and ſaponaceous drink. Sometimes the uvula, tonſils,

and velum pendulum become ſo much ſwelled as to unite, as it were, into a tumour, occupying the whole aperture of the fauces, and almoſt intirely preventing the entrance of the air; in which caſe the moſt immediate, and almoſt only remedy, is the prudent and cautious ſcarification of theſe parts, by the diſcharge occaſioned from which a detumeſcence very quickly follows.

* Two objections may be offered to the opening of the ſublingual veins: *firſt*, that when ſlightly ſcarified they do not pour out enough of blood; *ſecondly*, that when too boldly cut they diſcharge more than proper, and occaſion an hemorrhage which ſometimes cannot be ſtopped. This can ſcarcely ever be apprehended in a great congeſtion of blood; for, on account of the reflux of the blood being nearly prevented, theſe veins become turgid, and are not ſo quickly emptied; in the next place, they ought not to be pricked, but cut acroſs, and fomented with warm water held in the mouth, that the blood may flow freely, and for a length of time; which we deſire. Thus the firſt objection is obviated. The other, namely, the apprehenſion of an hemorrhage enſuing, vaniſhes at once on conſidering the diatheſis of the blood in true and genuine inflammation, and the ſmallneſs of the veins. As the blood is unuſually prone to concrete and cohere, it can ſcarcely happen that it will continue to flow longer than we deſire. For in a ſhort time it either ſpontaneouſly, or in conſequence of contact with the air, coagulates and ſhuts the mouth of the wound; or, in conſequence of the application of cold water, or applying pledgets of folded linen to the wound, and preſſing them to it for ſome time with the hand, it is eaſily ſtopped. Laſtly, ſuch is the ſmallneſs of the ſublingual veins, that they are incapable of occaſioning a profuſe hemorrhage. But theſe objections to opening the ſublingual veins apply with truth to the angina, which is not inflammatory, and to that which oc-

curs in cachectic and ſcorbutic patients. For in ſuch perſons almoſt fatal hemorrhages ariſe from the boldly opening of the ſublingual veins, as I myſelf have more than once obſerved. But I never obſerved this accident to take place during a true inflammatory diatheſis of the blood, although I have frequently had recourſe to it myſelf, and have been preſent when it was performed by others.

386. In the mean time we muſt not neglect thoſe remedies, the external application of which is ſuppoſed to contribute to the alleviation of the complaint. Moſt authors are agreed, that at the commencement of the diſeaſe, theſe remedies are to be employed externally which may gently repreſs the influx of fluid, and ſomewhat conſtrict the veſſels; and they recommend ſimilar remedies at the decline of the diſeaſe. But they guard againſt them with the utmoſt care while the diſeaſe is advancing, or has already advanced; on account of their compacting the the blood which is collected, and ſtraitening the paſſages. It is ſafer, however, even at the very beginning, to occaſion derivation and revulſion of the blood, than to repreſs and ſtrengthen it. Hence it is better to ſurround the neck with moiſt fomentations, moderately warm, and conſtantly applied, and with emollient and gently diſcuſſing cataplaſms of the ſame kind, caution being uſed not to increaſe the uneaſineſs by too much heat or weight. The moſt uſual remedies

employed with this view are, decoctions of mallows, marſh-mallows, pellitory, lint-ſeed, fænugreek, chamomile, miſletoe, verbaſcum, of which alſo cataplaſms are prepared, with the addition of ſome fat oil, as that of nymphæa, violets, roſes, or the like. Some add to theſe a little oriental ſaffron, or camphôr; but care muſt be taken that the patient may not be injured by the ſmell. Others approve of the pulp of caſſia applied to the neck like a poultice, with the ſame view; and, in fact, however ſimple, it appears to be preferable to many other remedies; it is neceſſary, however, previouſly to heat it gently, and not to apply it in great quantity. Some even, influenced by the authority of the ancients, preſcribe rubefacient and ulcerating remedies, to be applied to the neck and breaſt, namely, muſtard, ſalt, ſquills, or the like, to draw the diſeaſe to the ſurface *. Nay, they apply cantharides ſprinkled upon dough, to raiſe bliſters, and mention what very wonderful benefit has already been obtained in this way. It is neceſſary, however, that the veſſels ſhould have been previouſly emptied, and the force of the fever ſomewhat blunted. But when there is very great fear that ſuffocation may ſuddenly come on, to leave nothing untried, they are of opinion that we muſt have recourſe without delay to tracheotomy, which of itſelf is neither difficult nor dangerous †. But this may prove ſerviceable

only, when the cauſe of the ſuffocation is not propagated lower down than the larynx; and not otherwiſe.

* Swieten, l. c. † *Séanc. Publiq. de la Soc. de Med. de Paris, le* 9. *Dec.* 1779. Louis, *Mem. de l'Acad. Roy. de Chir.* T. iv.; and De Martin. *ib.* T. v. *Vid.* Le Blanc, *Op. Chir.* vol. i.

‡ Tracheotomy, which is performed by opening a hole between the rings in the trachea, and introducing a proper tube, as ſurgeons teach, through which the breath may be drawn, is attended with ſcarcely any danger. But when any body which has by accident fallen into the trachea requires being extracted from it, it then becomes neceſſary not only to divide the teguments by a longitudinal inciſion, and to ſeparate the muſcles, but alſo to cut through ſeveral of the rings, and part of the thyroid gland, that the body may admit of being taken out. In which caſe the operation is not intirely free of danger; 1. becauſe the wound does not readily unite, nor is it ſoon covered with a cicatrix; 2. becauſe the thyroid gland is wounded; 3. becauſe there is conſiderable reaſon to apprehend that an hæmorrhage may take place from the divided blood-veſſels, which are by no means inconſiderable; and, 4. becauſe the recurrent nerves are frequently cut through, which is attended with the loſs of ſpeech. But although the firſt kind of tracheotomy may be performed with more ſafety and eaſe, I do not wiſh that it ſhould be ſuppoſed that it is intirely void of difficulty. For it ſeldom happens that the tube, which is inſerted into the hole, ſticks in its place, ſo as not frequently to come out, and render the operation unavailing. But if we attempt to keep it in its place by binding it, and by compreſſion, it frequently excites a cough and pain, ſo that it becomes neceſſary to remove it. Hence Fourcroy of late has given it as his opinion, that *laryngotomy* is preferable to tracheotomy; and propoſes the moſt convenient part in which the operation may be performed, without uneaſineſs or difficulty. The place which

is beſt calculated for this purpoſe is, the triangular ſpace lying between the thyroid and cricoid cartilages; for in that part no glands, veſſels, muſcles, or nerves of any great conſequence, are cut. Merely the ſkin and coat of the trachea are perforated by means of a triangular needle, incloſed in a cannula, commonly named a *trocchar*. Vicq. D'Azyr ſuppoſes that this place is preferable to any other; and adds, that that operation had been performed with the greateſt ſucceſs upon dogs, (*Séanc. Public. cit.*) But performing the operation in this part will be attended with utility, when the cauſe threatening ſuffocation affects the upper part of the larynx, though not if it remain below the perforation. It will likewiſe be uſeleſs, as appears when any body which may have fallen into the trachea requires being extracted. For in that caſe the trachea itſelf muſt be opened, as I ſhall ſhortly point out.

387. When the angina ſeems to have a tendency to ſuppuration (373.), the part in which the ſuppuration takes place muſt be conſtantly moiſtened and fomented with milk, butter, the blandeſt oil, or an emollient and mucilaginous decoction. When the pus is at length concocted, the abſceſs ought to be immediately opened by means of ſome proper inſtrument, to make an outlet for the pus. But when the tonſils have been frequently ſubject to inflammation, and have never perfectly ſubſided, being at the ſame time very apt to relapſe into the complaint on any ſlight occaſion; in that caſe, if they undergo ſuppuration, they muſt not be too ſoon opened, but we muſt wait until the ſuppuration has obliterated every degree of hardneſs and ſwelling. For thus, not only is the ſcirrhous indura-

tion of them, but likewiſe their great tendency to inflammation, uſually prevented. Not unfrequently, merely from compreſſion, or the repeated efforts to ſwallow, the abſceſs burſts, and, in conſequence of the pus being diſcharged, the patients, who a little before appeared reduced to the laſt extremity, are ſuddenly relieved and reſtored to health. After the opening or ſpontaneous burſting of the abſceſs, it is ſufficient to gently clean the ulcer with a decoction of barley mixed with honey; by means of which alone it is well cleanſed, and made to heal.

388. If, on the other hand, ſymptoms of gangrene begin to appear any where in the fauces (383.), without farther delay we muſt have recourſe to antiſeptics; in the employment of which, however, it is neceſſary to be careful not to increaſe the inflammation. All acrid and irritating remedies, therefore, ought to be avoided, or at leaſt employed with the greateſt caution. At the beginning of the complaint, when the ſymptoms of gangrene are ſtill doubtful, it will be adviſeable to employ a gargle of the water of elder-flowers, or ſcordium, ſlightly acidulated with melon or citron juice, or one of common water and a little vinegar and honey; or if the patient cannot or will not employ gargles, it may be proper to inject theſe liquors into the fauces by means of a ſyringe, the patients in the mean

time being desired not to inspire. When the symptoms of gangrene increase, some of the spirit of sea-salt, or of sal-ammoniac, or of tincture of myrrh, may be added; and these same spirits, received on honey of roses, may be applied by the hand, if possible, or by a pencil dipped in them, repeatedly and lightly, to the gangrenous spots, that their progress may be checked. But, if these remedies fail, the parts affected ought to be scarified. In the mean time, if the power of swallowing return, or become more free, all those drinks which are diluent, cooling, and call forth a sweat, which rouse by their gentle stimulus the vital power, and are opposed to putrefaction, may be given warm, and with a liberal hand. Flowers of chamomile, scordium, peruvian bark, volatile alkali, and camphor, are particularly recommended. Infusions, decoctions, and tinctures are prepared from them. Camphor may be conveniently dissolved in warm vinegar, with the addition of a little white sugar, and mixed with any fluid. The taste is easily corrected by adding the syrup of currants, violets, marsh-mallows, rasp-berries, or the like.

389. It less frequently happens that inflammatory angina terminates in scirrhus (383.). But if this ever happen, the remarks which I have elsewhere delivered must be called to mind *. The tonsils are most liable to this complaint. A scirrhus in them, if it cannot be resolved in any other

way, may be eaſily cut out by a ſurgical operation without danger, or may be gradually obliterated by frequent ſcarifications, and conſumed by inducing ſuppuration. Such are the moſt uſeful remedies which are employed in the cure of the inflammatory angina; although all of them are not conſidered as neceſſary in every caſe, and in every ſpecies of the complaint. For ſlighter inflammations of the fauces, uvula, and tonſils, are diſcuſſed by fewer and milder remedies. The diet ought to conſiſt of weak broth, the yolks of eggs, hydrogala, or a ſtrong ptiſan.

* *Comment. on Inflam.* par. 78.

THE CATARRHAL, OR SPURIOUS, ANGINA.

390. FROM the inflammatory, or genuine, angina we proceed to the *catarrhal*, *lymphatic*, or *ſpurious angina*. This laſt ſpecies of the complaint differs from the former in the ſwelling being rather lymphatic and ſerous than ſanguineous, in its being leſs red, nay, ſometimes paliſh, in the pain being inconſiderable, or at leaſt not throbbing, and in the fever being either abſent, or much milder, like that of people labouring under catarrh. The tonſils, uvula, velum pendulum, and adjacent parts are more frequently attacked with this diſeaſe than the reſt of the fauces. Likewiſe the moſt uſual ſubjects of the complaint are

men of a phlegmatic and lax habit of body, people advanced in life, as well as children, and thoſe who live in damp or rainy ſituations.

391. An accumulation of mucus, lymph, or ſerum, in the follicles, cryptæ, veſſels, and cellular membrane, in whatever manner they occaſion irritation and inflammation by their acrimony, quality, or lentor, ſeems to conſtitute the proximate cauſe of the complaint. Among the remote cauſes are enumerated, a moiſt and cold temperament; old age or infancy; the female ſex; or rainy, hot weather; the winter ſeaſon; ſudden and remarkable changes of the weather; a bad ſtate of the fluids, proceeding from a ſcorbutic, arthritic, or venereal taint; morbid ſtates of the lymph and lymphatic ſyſtem; and ſo forth.

392. To this ſpecies of angina (390.) ought to be referred the *angina aquoſa*, *lymphatica*, *pituitoſa*, and *œdematoſa* of authors, in which, to be ſure, there is a ſwelling of the fauces; but they remain lax, ſoft, without redneſs, ſlightly pained, and frequently pellucid, as it were, with a watery tumour; likewiſe ſlight pains of the fauces occur without fever, with none, or ſlight redneſs, and with a ſwelling, which is not very warm, and having a tranſparent appearance, in conſequence of which the functions of deglutition and ſpeech are not much injured.

393. The diſeaſe is readily recognized from the deſcription hitherto delivered. Swellings of

the cervical, maxillary, parotid, and other ſalivary or lymphatic glands, ſometimes are not wanting. Meade makes mention of a particular ſpecies of *angina aquoſa*, which prevailed epidemically in Wales; particularly in maritime places, attended with malignant ſymptoms reſembling ſwelling and diſtenſion of the glands of the mouth, palate, and neighbouring parts, and which cut off many patients in two or three days *. Otherwiſe it is of itſelf not attended with much danger, and is frequently gradually removed merely by proper diet, and the aſſiſtance of nature. When the congeſtion is more ſevere and greater, and recurs very frequently, it is more difficultly cured; nay, it ſometimes paſſes into an abſceſs, or leaves behind it hard tumours. Hence it is apt to paſs into ſcirrhous angina. It cannot be denied, however, that theſe angina's ſometimes become dangerous, namely, when they affect the epiglottis, glottis, and larynx, or otherwiſe ſtraiten the air-paſſages, which appears from the difficulty of inſpiring, from the ſeat of the pain, from the roughneſs of the voice, or aphonia, from the cough, ſnoring, and other ſymptoms; or when proceeding from a ſcorbutic or venereal taint, they excite bad conditioned phagedenic ulcers, deep, extenſive, very painful, inflamed around, and obſtinate.

* *Monit. et Præcept. Med.* c. 4. p. 52.

394. When the complaint, therefore, requires

the aſſiſtance of art, thoſe remedies may be employed which diminiſh the quantity of fluids, and derive them elſewhere; which attenuate the thick and ſluggiſh lymph, and digeſt and diſſolve it when in a ſtate of ſtagnation; which correct and blunt acrimony; and reſtore force and tone to the veſſels, fibres, and membranes. Therefore, if any fever be preſent, although not very acute, if the ſwelling, pain, and redneſs increaſe to ſuch a pitch as to give reaſon to apprehend the immediate approach of inflammation, or if difficult reſpiration be conjoined with difficult deglutition, it will not be improper to let blood, but more ſparingly than in the inflammatory angina; and this will be more allowable, particularly if the patient's temperament incline to the ſanguine, and if he be of a full habit of body, and in the prime of life and vigour. After having once drawn blood, or twice if neceſſary, both dry and ſcarifying cupping-glaſſes muſt be applied to the neck and back; the application of which may be conſidered as much more adviſeable when it appears that there is no room for veneſection; nor muſt we ſpare the ſublingual veins, whenever the tongue has contracted a great deal of fluid, and has become ſo much ſwelled that it cannot be contained within the mouth. Infants and children, in whom veneſection cannot be performed, may receive relief from the application of leeches, near the veins of

the fore-arm or neck. In the epidemic angina aquoſa, mentioned by Meade, which proved ſo pernicious, that many patients ſeized with it were cut off within three days (393.), a great many received benefit from this method of treatment being employed: blood was immediately let in great quantity; the belly was then looſened by means of a gentle cathartic or injection, after which blifters of cantharides were applied under the chin, or to the ſides of the neck; but if ſufficient relief was not obtained, the palate near the uvula and veins under the tongue and ſublingual veins were ſufficiently deeply ſcarified to afford an outlet to the bad humour; and internally the compound powder of contrayerva root, with an equal weight of nitre was adminiſtered three or four times a-day *.

* Meade, l. c.

395. After bleeding has been performed, if it may have been allowable, it remains, in order to occaſion the revulſion and evacuation of the ſerous colluvies, to purge the belly by means of hydragogues, namely, manna, ſenna, the ſyrupus aureus, the ſal catharticus amarus, and diagrydium; and likewiſe, if it be neceſſary to act more decidedly, jallap, mechoacanna, and the like; which is particularly adapted to the angina pituitoſa, aquoſa, and œdematoſa (392.). It is proper alſo to give occaſionally internally diluent remedies, and thoſe which by their gentle ſtimulus promote

the diſcharge of urine and ſweat, as decoctions of burdock-root, rough bind-weed, ſoap-wort, ſaſſafras-wood, and ſo forth; to which may be added ſome ſimple oxymel, or oxymel of ſquills, as may appear more proper, that they may prove more powerfully inciding. In this caſe alſo, if in any, the æthiops mineral may be employed to the extent of half a drachm twice a-day, which Lange affirms to be the moſt immediately ſerviceable remedy in angina *. In the ſpecies of the complaint combined with a venereal taint, or accompanied with ſtrumous or ſcirrhous tumours, this mercurial remedy will be more particularly proper.

* *Miſcel. Veritat.* faſcic. i. p. 5

396. But ſometimes medicines cannot be ſwallowed. In that caſe it is attended with the greateſt advantage to occaſion ulceration in the back-part of the neck, by means of cantharides; to occaſion bliſters in the ſame manner upon the arms; to rub the feet and legs ſmartly; and to purge the belly with acrid injections. Likewiſe gargles, firſt of a reſolving and diſcuſſing kind, and afterwards ſomewhat aſtringent and ſtrengthening, are proper. If theſe from any cauſe cannot be adminiſtered, or the gargling of the throat occaſion pain, or if much mucus and viſcid lymph adhere to, and obſtruct the fauces, a proper fluid ought to be injected by means of a ſyringe, in order to clear the throat; but it

muſt be done in ſuch a manner as not to enter into the larynx: for it might endanger the ſupervening of ſuffocation. Nor are thoſe remedies improper which occaſion a diſcharge of ſaliva, which, however, muſt be ſuch as not to prove inimical to the inflammation, if any be preſent, or which, if it be not preſent, may not excite it. Oxymel of ſquills, as alſo the ſalt of bugle, in both caſes, and in both ways, ſeem to be preferable to others. Beſides emollient, diſcuſſing, and reſolving fomentations, cataplaſms, and plaſters muſt not be omitted externally. Nay, their action may be promoted by gentle friction. Theſe are conſidered as being particularly ſerviceable when the glands are filled and turgid with tenacious and thick lymph. In which caſe, moiſt fomentations ſupply watery vapour, which being received into the abſorbent veins, is ſhortly carried to the glands, and dilutes, attenuates, and diſſolves the lymph ſurpriſingly.

397. Laſtly, if the complaint unfortunately terminate in abſceſs or ſcirrhus, nearly the ſame method of cure which I have already recommended (387. to 389.), will be proper. The bad-conditioned and phagedenic ulcers (393.), if they ſupervene, are cured by the ſame remedies which are oppoſed to the known acrimony and dyſcraſy of the fluids by which they are cheriſhed. They muſt, therefore, be timeouſly op-

poſed by antiſcorbutic and antivenereal medicines, employed for a length of time, and with a liberal hand; in the mean time not omitting deturgent and antiſeptic topical applications (388.); and, if they be foul, employing ſpirit of vitriol, or the collyrium of Lanfranc. Caution, however, muſt be uſed not to irritate the ulcers any longer by acrid ſubſtances, after their being firſt cleaned, when they are pure, red, and very ſenſible; but it is then better for them to be nouriſhed and ſoftened by the moſt emollient and mildeſt remedies. In the ſame manner (394. to 397.) muſt the *angina aquoſa* and *œdematoſa*, as well as the ſlight pains of the fauces (392.), when they are without fever, be treated, excepting and omitting the bleeding; for in them cathartics, aperients, and epiſpaſtics, applied even to the neck itſelf, bliſters and diaphoretics alone are ſufficient; although in the ſlighter degree of the diſeaſe, and when thoſe parts which are leſs neceſſary to life are injured, it frequently happens, that by a mere attention to diet and abſtinence, the complaint is intirely removed in a few days.

THE MALIGNANT GANGRENOUS ANGINA*.

398. I HAVE already ſhewn (378.), that the inflammatory angina ſometimes terminates in gangrene. In this place, however, I am to treat

of another kind of angina, which is malignant, and generally epidemic, particularly hoſtile to infants, children, and young people, and ſeems to proceed from a peculiar poiſonous and putrid fomes, carried to the fauces, and eſpecially to the tonſils, and burning them like fire. In the former no malignity is preſent, nor does any putreſcency precede; and the gangrene itſelf, when it comes on, ſupervenes only upon the greateſt degree of inflammation, to which it is owing; and generally, eſpecially when it affects the internal parts and ſpreads widely, towards the concluſion of the diſeaſe proves certain death. In the latter the caſe is otherwiſe; for very ſlight ſymptoms of the inflammatory diatheſis are preſent, while thoſe of putreſcency are well marked and unequivocal; and the gangrene, which is common to almoſt all patients, does not come on late, but very quickly; and although it frequently occaſions death, it does not uniformly prove fatal, unleſs it be propagated to the larynx, trachea, and lungs; for frequently upon a proper method of cure being immediately employed, the complaint is arreſted, and the patient ſaved. It is therefore not the offspring of the moſt violent inflammation, but the effect of a cauſtic, malignant, and deleterious cauſe. We have named this *gangrenous angina*, on account of the gangrene perpetually deſtroying the fauces; and added the term *ma-*

lignant, in order that it may be distinguished from the inflammatory angina, which likewise occasionally terminates in gangrene.

* The Synonyms.

The *Angina maligna & gangrænosa* an. 1751 ad 1753, of Huxham, *Journ. de Med. Octob.* 1757, vol. vii. p. 241. The *Angina gangrænosa* of Boulland, *Quest. Med.* 1750. The *Angina gangrænosa* of Chomel, *Dissert. sur l'Espec. de Mal de gorge gangreneux de l'an.* 1748. Paris 1749. The *Angina in gangrænam desinens* of Marteau, *Journ. de Med.* vol. iv. *Mars.* 1756. p. 222. The *Angina maligna ulcerosa* of Fothergill, *An Account of the Sore Throat attended with Ulcers*, an. 1748, 1751. Vid. *Com. Lipsi.* vol. i. p. 493. The *Tonsillarum gangræna* of Meade, *Monit. et Præc. Med.* c. iv. p. 52. The *Pestilens et præfocans pueros abscessus, quem Græcè vocant* παιδαγχόνην λοιμώδην, *sive puerorum strangulatum pestilentem* of M. A. Severin. *De Recondit. Absc. Nat.* ed Francof. 1643. p. 428. *et seq.* The *Crustosa malignaque tonsillarum et faucium ulcera* of Jo. Ant. Foglia, 1620, *De Anginose Passione.* The *Morbus strangulatorius* of Aetius, and of Signin, *De Morb. Strangul. Rom.* 1636, 1638. The *Pestilens faucium affectus* of Jo. Andr. Sgambati, *De Pest. Fauc. Affect. Neapoli sæviente*, 1620, 1624. The *Ulcus Syriacum* of M. Ant. Alayni, *De Ulc. Syr.* The *Epidemicus strangulatorius affectus* of Jo. Bapt. Carnevalle, *De Epid. Strang. Affect.* The *Garrotillo* of the Spaniards, Renat. Moreau, *inter epist. Medicinal.* Thom. Bartholin. cent. i. ep. lxxxi. The *Angina gangrænosa, pædanchone* of Severin and Vogel, *De Cogn. et Cur. Præc.* c. h. *Affect.* § 184. p. 135. The *Angina Maligna*, or *Morbus strangulatorius, vel pestilens faucium affectus* of Home, *Princ. Med.* lib. ii. P. 3. sect. iv. The *Anginæ primum genus an.* 1747 of Martin Ghis, *Lett. Med.* let. 2. *sopra le Angin. Epid. Degli*, an. 1747, c. 1748. Cremon. 1749.

† *Comment. on Inflam.* par. 43. to 47.

399. That this diſeaſe, if it was not known to Hippocrates *, was known to, and clearly deſcribed, by Aretæus †, and by Aetius ‡, is the opinion of moſt modern authors ‖. But Vogel differs widely from them, being of opinion that theſe authors, in that paſſage, treated of aphthæ, not of angina, as they make mention of ulcers proceeding by degrees from the tonſils to the uvula, tongue, gums, and ſockets of the teeth, which is the nature of aphthæ. "And doubtleſs," he ſubjoins, "in the angina gangrænoſa, the tongue and gums are free of any taint; nor does it prove diſtreſſing for a length of time §." But Van Swieten entertains a quite oppoſite opinion; for he grants indeed that a complaint is deſcribed there under the name of aphthæ, but that it is very different from the complaint which now goes under that name, being of opinion that genuine gangrene ariſes from the depoſition of á malignant matter affecting the fauces, and that ſuch a complaint comes under the head of gangrenous angina ¶. And with regard to Aretæus, in fact, if all the ſymptoms enumerated in the chapter *Concerning Ulcers of the Tonſils* be well weighed, it will appear much more probable that he does not there treat of the complaint which now is named aphthæ **, but concerning the malignant and gangrenous diſeaſe of the fauces, which has a very great reſemblance to this gangrenous angina. For, beſides the malignant ulcers which abound

with a white, or livid, or black concrete humour, growing in the tonſils; mention is likewiſe there made of an external redneſs of the neck, which, like a phlegmon, ſometimes breaks out, and is very different from the aphthæ of the preſent day; while, on the other hand, it is a ſymptom almoſt peculiar to the gangrenous and malignant angina. Moreover, the complaint deſcribed by Aretæus is not a chronic one, as perſons labouring under it are there ſaid to expire not many days after, overpowered by the inflammation, fever, and want. Add to this, that Aetius mentions not a word concerning the tongue, gums, and teeth, while, in the enumeration of the other ſymptoms, he ſeems intirely to agree with Aretæus. It appears probable, therefore, that what Aretæus remarked concerning the gums, tongue, and teeth, and which Vogel eſtimates too highly, was rather an accidental and neceſſary, than a conſtant and inſeparable ſymptom of the complaint, as it is in true aphthæ, which, beſides, do not ſo quickly run through their courſe.

* *Coac.* 276. p. 371. *Præn.* 131. *Ep.* l. 6. ſect. 7. † *De Cauſſ. et Sign. Acut. Morb.* l. 1. c. 9. ‡ *Tetrab.* 2. ſerm. 4. c. xlvi. *De Cruſt. et Peſt. Tonſil. Ulcerib.* ‖ Home, *Princ. Med.* l. 2. P. 3. ſect. iv. Meade, l. c. Swieten *in* Boerhaav. § 816. n. 2. and many others of them, who have made mention of that diſeaſe before their time. § *De Cog. et Cur. Præc.* h. c. *Affect.* cl. i. § 184. not. *). ¶ L. c. ** L. c.

400. But, leaving this diſpute concerning the

antiquity of the diſeaſe (399.),—which is neither uſeful nor neceſſary,—it is an undoubted fact that it was not deſcribed with perfect accuracy until the year 1620 *, for as it raged at that time in Naples epidemically, and pervaded the whole of Italy and Spain, occaſioning great devaſtation every where, it immediately gave riſe to the publication of a number of works, among which are chiefly celebrated the commentary of Foglia, *De Anginoſa Paſſione* †, the work of Sgambati, *De Peſtilenti Faucium Affectu Neapoli Sæviente* ‡, and that of Severini, *De Peſtilente et Præfocante Pueros Abſceſſu* ‖. Laſtly, in our own times, ſince this direful complaint has appeared for ſome years in the Netherlands, France, and England §, it has been ſo illuſtrated by the obſervations of phyſicians, that a complete hiſtory of it is to be found in the works of Fothergill ¶, Rabours **, Boulland ††, Marteaux ‡‡, Raullin ‖‖, Huxham §§, Boucher ¶¶, and not a few other medical authors of reputation.

* Moreau, however, in epiſt. lxxxi. of the *Epiſt. Med.* Tho. Bartholini, cent. i. mentions that Weir, in the book of *Obſervationes Rariores*, deſcribes a particular kind of epidemic angina, which prevailed in the years 1564 and 1565 throughout Lower Germany. Likewiſe in the year 1611, a work intitled *Diſputatio Medica* Jo. Alphonſi De Fontecha, *De Angina et Garratillo*, appeared at Alcado de Henarez; as alſo another the ſame year, intitled Franciſci Perez. *Lib. de Affect. Puer. &c.* But, as I have already obſerved, ſince the year 1620, it has been both more carefully deſcribed, and much more generally known.

† Neapoli, 1620. ‡ *Ib. an. eod.* ‖ *Ib.* § An. 1739, 1742, 1746, 1747, and 1748. ¶ Lond. 1748. and 1751. ** *De Ulc. Tonſill.* 1749. †† *Theſ. Med.* an. 1750.

‡‡ In the year 1752 this complaint prevailed in the Simian Valley in Switzerland, according to Haller and Zimmerman. Langhans, *Act. Helv.* T. ii.

‡‡ *Journ. de Med. Mars*, 1756. ‖‖ *Ib.* & *L. des Malad. Occaſ. par les Prompt. et Freq. Variat. de l'air*, c. xiii. *Maux de Gorge Epid.* an. 1748, 1749, p. 242. §§ *Journ. de Med.* 1757. ¶¶ *Ib.* T. viii. p. 556.

401. Generally on a ſudden a pain and acrid heat of the fauces, accompanied with difficult ſwallowing of the ſaliva or any other thing, comes on. The internal parts, when inſpected, exhibit an eryſipelatous redneſs, ſuch as appears in a carbuncle, affecting the velum pendulum, uvula, tonſils, and pharynx. The uvula is generally ſwelled and elongated. One or other of the tonſils, ſometimes likewiſe both, ſwells, and is ſoon marked about the middle with a white ſpot like an aphtha, or with a livid or black one, which is an indication of future gangrene or ulcer. The ſpot in a ſhort time extends, and occupies the whole ſurface of the tonſils. The pain is then diminiſhed, and the ſwallowing becomes eaſier. But when this eſchar firſt falls off, or is removed, which ſometimes happens, it is ſoon ſucceeded by another which penetrates deeper. The mouth emits a fetid ſmell, by which the contagion is communicated to others. Heavineſs

of the head comes on; ſometimes blood guſhes from the noſe; the ſanies of the ulcer falls into the larynx, and excites a clangous cough, and interrupts the reſpiration, when the patient begins to ſleep, in conſequence of the complaint being propagated to the larynx and trachea; nay, it interrupts the ſleep when it has already commenced, giving riſe to ſudden ſhrieking or loud ſnoring; it likewiſe renders it difficult while the patient is awake; and thus, in a few days, as if the breath were interrupted by a rope, it ſuffocates the patient cruelly, the gangrene having extended to the trachea and lungs, nay, ſometimes to the pharynx and œſophagus, or even to the ſtomach; which laſt, however, is a matter of very rare occurrence.

402. Sometimes the fever comes on a little before the fauces become painful; at other times the angina and it commence ſimultaneouſly; ſometimes for the firſt two or three days it appears very mild, and increaſes about the fourth day. Sometimes at the very beginning it is violent, but does not continue long in the ſame ſtate, ſhortly inclining to moderation. The pulſe for the moſt part is weak, quick, and frequent; rarely great, ſtrong, and hard; and, when it is ſo, it ſhortly paſſes into a languid, ſoft, and ſmall one. The febrile acceſſion commences with chilline ſs, cold, or trembling, which is ſucceeded by

burning heat. In the evening and at night all the ſymptoms are aggravated; but generally abate in the morning, in conſequence of a ſlight ſweat flowing.

403. Frequently at the beginning of the complaint the head and neck are affected with pain, ſometimes accompanied with vertigo, deep ſleep, a ſenſation as if the bones of the back and limbs were broken, a weight at the pit of the ſtomach, and frequent ſighing. In ſome caſes the face is ſwelled and red, the eyes water, and are ſuffuſed with blood; while in others it is pale or livid, which happens chiefly when a very bad fetor from the mouth denotes that the gangrene has got to a head. Not unfrequently nauſea, vomiting, or a putrid diarrhœa, ſucceed to each other. The tongue is generally covered with a thick, white mucus; and although it appears ſoft and moiſt, the patient notwithſtanding, as Aretæus obſerves, is parched with thirſt; but this is by no means an uniform ſymptom, for other authors aſſert that they are frequently not diſtreſſed with thirſt. The urine is firſt paſſed crude and watery, afterwards yellow and ſaffron-coloured. Moſt of the patients are haraſſed with an indeſcribable anguiſh, anxiety, reſtleſſneſs, perturbation of mind, nay, with delirium itſelf, and overwhelmed with languor and dejection. The blood which is drawn is generally of a crimſon-red colour, hardly concretes, in conſequence

of its abounding with a great quantity of ſerum. Sometimes, however, it ſhews the buffy coat, particularly when drawn at the beginning of the diſeaſe; but the craſſamentum ſcarcely coheres, generally becomes black, and eaſily diſſolves.

404. Nor is it an uncommon thing in this diſeaſe, eſpecially when it prevails epidemically, for an eryſipelatous redneſs to break out about the neck, breaſt, and arms, frequently combined with the meaſley ſpots, or for the miliary eruption or red ſpots to break out ſomewhere on the ſurface; nay, ſometimes the parotid, maxillary, and jugular glands themſelves become ſwelled and painful. Likewiſe in ſome conſtitutions the gangrene and ulcers have been obſerved to paſs from the tonſils to the uvula, and to eat it through. Sometimes, likewiſe, as I have already obſerved, the ſanies, in conſequence of paſſing down, attacks the velum pendulum, pharynx, œſophagus, and ſtomach itſelf. In other caſes the tongue, gums, and ſockets of the teeth, are infected with a ſimilar ſanies, in conſequence of which the teeth become carious and black; although we believe it to have been but rarely recorded, as I have already mentioned, by Aretæus. Nay, it ſometimes happens that the force of the diſeaſe paſſes up to the very noſtrils, from which it occaſions a copious diſcharge of mucus.

405. I have already ſaid that the deglutition, particularly at the beginning of the diſeaſe, is in-

jured. Hence the patients, dreading the pain occaſioned by ſwallowing, either abſtain from drink, or, if they drink any, generally reject it by the noſtrils. But it commonly happens that when the gangrene ariſes the pain abates, nay, that when it is perfected it diſappears, on account of the ſenſe of the parts being obliterated, in conſequence of which the paſſage for taking in food or drink becomes free. In all caſes the voice is hoarſe and obſcure; but when the violence of the diſeaſe deſcends to the larynx, and nearly interrupts the reſpiration (for the aperture of the glottis is eaſily obſtructed), the patients not only make a particular noiſe and hiſſing, while they perform reſpiration,—which is a proof of the ſtraitening of the paſſage,—but alſo are ſcarcely able to lie down. On which account particularly, children riſe out of bed, and either ſtand or ſit in the erect poſture, in order to draw their breath; but in a ſhort time, either from weakneſs or languor, they again ſink down, and toſs conſtantly about until their ſtrength is completely overwhelmed, and they expire in a ſtate of ſuffocation. This happens upon the ſame day when the larynx and trachea are manifeſtly obſerved to become affected. Thoſe patients, however, who have the good fortune to ſurvive the complaint, experience it in a milder degree, and, aſſiſted by the power of nature, are freed from the poiſonous fomes in conſequence of an eaſy and laud-

able ſuppuration coming on, or a gentle and continued diſcharge of ſaliva and ſweat. But boys and girls are more liable to be affected with this complaint, and run greater riſk before the period of puberty, than thoſe who have paſſed it and are grown up; although it is a certain and undoubted fact that no age or temperament is exempt from it. But, of all others, thoſe who are moſt liable to it are the infirm and debilitated, or people with bad-conditioned fluids.

406. The appearance of the diſeaſe is frequently very fallacious, inſomuch that a perſon who has not ſeen it before, is apt to flatter himſelf with the hopes of an immediate recovery. A ſurgeon of great experience and celebrity being called to a child of ſeven years of age, the only heir of a noble family, labouring under this complaint, during the firſt days of it, not only laughed at a young phyſician, who had formed a proper judgement with reſpect to the nature of the diſeaſe, but neglected, as a thing altogether ſuperfluous, the ſcarification of the tonſils, in which a white ſpot had ariſen, attended with the diminution of the pain, and difficulty of ſwallowing. But two days afterwards, when the diſeaſe had almoſt cloſed up the larynx, and the face had become livid and cadaverous, he was very much ſurpriſed to find that death was faſt approaching, without any hope being left. Being then thunderſtruck with the novelty of the thing,

he privately requeſted of the young phyſician that he would point out the authors who have made mention of ſo pernicious a kind of angina, ſo rare and fallacious. The diſeaſe, therefore, is apt to deceive the moſt experienced practitioners. It neither obſerves critical days, nor has it any certain criſis. It generally terminates between the ſecond and ſeventh day. A ſwelling and redneſs breaking out externally in the courſe of the diſeaſe, generally affords a favourable prognoſtic. A diminution of the heat, a copious expectoration, and ſhining of the eyes, are favourable; and *vice verſa*. A diarrhœa, rigor, weak and ſmall pulſe, proſtration of ſtrength, fainting, œdematous ſwelling of the face, giving a cadaverous appearance, a livid colour, or the ſtriking in of the eruption, and immoderate hemorrhages portend death. Of the ulcers, again, thoſe are ſafer which are white; thoſe which are aſh-coloured are worſe; and the livid and black worſt of all *. When the diſeaſe has begun to take a favourable turn, the external tumour and redneſs diſappear, the cuticle falls off in ſcales, the fever diſappears, and the ulcers are healed up †.

* Home's *Princ. Med.* l. 2. p. 3. ſect. 4. *Ang. Malig.* § 6. 8. 9.

† Beſides the writers whom I have quoted, the copious obſervations upon the diſeaſe written by Huxham, to be found in the *Medical Journal* of Vandermond, ought to be read, vol. vii. p. 241. *et ſeq.*

407. From the obſervations already delivered, it appears that we may conclude that the proximate cauſe of the complaint conſiſts in a peculiar and malignant kind of eryſipelas of the fauces and tonſils, which is induced by an acrid and burning principle. This acrid or putrid principle either ariſes ſpontaneouſly in the body, attacking the fauces and neighbouring parts, or being engendered and evolved by the febrile motion, is depoſited in them; or is received by contagion, or paſſes from infected to ſound bodies; for that it is contagious appears from its rapid communication by means of the perſpiration, halitus, vapour, or ſanies, coming out of the mouth. But the remote cauſes are generally conſidered as being moſt of thoſe of other putrid and malignant diſeaſes; as warm and moiſt, or too dry air; a marſhy ſituation; the drinking of turbid and muddy water; fermented liquors; corrupted and acrid herbs, ſeeds, and pot-herbs; the employing of alkaleſcent, acid, or ſour articles of diet; putrid and cadaverous exhalations; a ſoft, lax habit of body, or a leucophlegmatic one, or one in which bad-conditioned fluids exiſt, as a ſcorbutic, rickety, and ſtrumous habit; the autumnal or vernal ſeaſon ſucceeding to unuſual heat; a peculiar ſtate of the air; and, probably, an epidemic miaſma.

408. Theſe obſervations I would have to be underſtood as applying to the primary gangre-

nous angina. For that which ſupervenes upon putrid fevers, and other malignant diſeaſes, and which is named by Penroſe and others *putrid* *, appears, if I miſtake not, to be widely different from the *gangrenous angina* hitherto deſcribed. The difference which exiſts between each of them, according to Penroſe, is as follows: In the gangrenous ſpecies, the tonſils and uvula become ſwelled and inflamed indeed, but they are not very turgid nor tenſe, being affected rather with a flaccid tumour, by no means hard. The colour is ſuddenly changed into an aſh or livid hue; the pulſe and urine generally recede little, or none at all, from thoſe in the healthy ſtate (excepting a few caſes, in which, as I have already ſhewn, the fever is ſomewhat more violent during the firſt days of the complaint), and the pain very quickly ceaſes, or is altogether abſent. And, which is the principal ſymptom of the diſeaſe, it comes on ſuddenly, and very quickly occaſions death. On the other hand, the putrid angina gradually ſupervenes upon putrid fever, and other kindred diſeaſes, and is not ſo rapid in its fatal termination, generally not occaſioning death until after many days. It appears commonly to be more ulcerous or aphthous than truly gangrenous †, as I have already mentioned.

* *A Diſſertation on the Inflammatory, Gangrenous, and Putrid Sore Throat; alſo on the Putrid Fever, together with their Diag-*

noſtics, and method of Cure. Oxford, 1766. *Vid. Com.* Lipſ. vol. xv. p. 338.

† Of this kind, I ſuppoſe, was the ſpecies of the complaint obſerved in the year 1748 and 1749, by Raullin, as well as that noticed in a particular hoſpital, an. 1749, by Laſſon, *Mem. de la Soc. Roy. de Med.* T. i. p. 97. For it ſupervened upon a gaſtrico-putrid malignant fever, occaſioned by the putrid miaſma ariſing from the bodies of oxen and cattle which had not been ſufficiently well buried. It was a ſymptomatic, putrid, and aphthous angina.

409. I ſuppoſe that the inflammatory angina, as I have already ſhewn (398.), differs in like manner from the gangrenous angina, which is now under diſcuſſion: 1. becauſe the inflammatory ſpecies very ſeldom, and only when the diſeaſe has arrived at the higheſt pitch of inflammation, as I have already ſaid, terminates in gangrene; 2. becauſe the red colour verges upon a livid and brown, not an aſh and white colour; and, 3. becauſe an acute and violent fever accompanies it, attended with a great, violent, and hard pulſe, and with blood, which is very apt to concrete, together with other ſymptoms denoting an inflammatory diatheſis. On the other hand, the malignant gangrenous angina, in moſt perſons whom it attacks at the ſame time, almoſt at the very beginning betrays ſymptoms of gangrene; it is rather an eryſipelatous than a phlegmonic ſwelling, and is quickly converted into a fetid ulcer, covered with a white or aſh-coloured eſchar or cruſt; it almoſt always

affects the fauces and tonſils at firſt; the blood is thinner, and the fever is accompanied with a weak pulſe, or, at any rate, with one which is neither hard nor ſtrong; with loſs of ſtrength; vomiting; colliquative and fetid diarrhœa; and ſlight delirium. The inflammatory ſpecies attacks robuſt men; the other, weak people, children, or infants. Laſtly, the gangrenous ſpecies ought by no means to be confounded with aphthæ. For theſe laſt firſt affect the tongue, lips, and palate, and afterwards the fauces, with ſmall puſtules, and generally without being attended with fever, unleſs they be ſymptomatic *. But the angina of which we are now to ſpeak, attacks firſt the fauces, and generally them alone, quickly waſting one or other, or both tonſils, with a puſtule, or white, or aſh-coloured ſpot, ſpreading wide, and of a gangrenous nature; nor is it ever unattended with fever.

* The aphthæ of the preſent day do not ſeem to differ from thoſe deſcribed by Celſus (lib. vi. c. xi.), in the following words: "But thoſe ulcers ſeem to be by far the moſt dangerous which the Greeks name *aphthæ*, eſpecially when they occur in children; for they frequently prove fatal. When they attack men and women, there is not the ſame danger. Theſe ulcers commence at the gums; after which they affect the palate and whole mouth, deſcending to the uvula and fauces, on their attacking which, children do not readily recover from them; and there is ſtill greater danger if the child be at the breaſt."

410. Hence, as the diſeaſe very frequently

proves fatal to infants and children, and very rapidly runs its courſe, we ought immediately to direct our whole endeavours, as far as poſſible to expel the malignant and putrid fomes from the ſyſtem, to check the corruption and gangrene, and to ſupport the vital powers. Experience has demonſtrated that copious or repeated bleeding not only proves very hurtful, but even accelerates the patient's death. It is therefore generally rejected in this caſe as hurtful. At the beginning of the diſeaſe, however, when the mortification has not yet commenced, when the ſtrength is ſufficient, when the patient is in his prime, and of a good and plethoric habit of body, and when the fauces are very much ſwelled and pained, it may not be altogether improper to let blood once ſparingly and cautiouſly; nay, it is then conſidered as neceſſary and beneficial to let blood, if not by opening a vein, at leaſt by cupping-glaſſes, or leeches. I acknowledge that I have employed either or both of thoſe remedies occaſionally with ſucceſs. But if theſe conditions do not authoriſe it, it is proper to abſtain intirely from bleeding.

411. But the ſafeſt and moſt uſeful of all remedies has been found to be the exciting of vomiting, as the great majority of writers acknowledge. For by means of it whatever of a virulent nature lurks in the ſtomach, œſophagus,

and glands and follicles of the fauces, is very quickly ejected from thence, and thus the fomes of the diſeaſe is in a great meaſure removed. Vomiting ought therefore to be excited immediately by ſome gentle emetic, as tepid water mixed with oil, oxymel, or ſquills, ipecacuanha, or tartar-emetic; and promoted by drinking abundance of tepid water, that a more eaſy and ready excretion of the morbid matter may be obtained. And if one vomiting do not ſeem ſufficient, it may be occaſionally repeated, that, by means of this evacuation, the force of the diſeaſe may be broken as much as poſſible. It can ſcarcely be conceived how much of its malignity and ſtrength the complaint loſes by obſerving this method. The ſame thing, however, cannot be ſaid of purging; for the exceſſive tendency of the fluids to colliquation frequently gives riſe to immoderate evacuations without the poiſonous fomes being expelled from the lurking places in which it was contained. Hence it is adviſeable to excite the belly, merely by injections, of which no one diſapproves, or to employ only the ſlighteſt purgatives, rather than by any cathartic. The belly is purged more advantageouſly and ſafely at the end of the diſeaſe, particularly when ſymptoms of a colluvies in the ſtomach and inteſtines are preſent, when the appetite is weak, the belly ſwelled, or the fever prolonged. For in this way in general all the recrementitious matter which

may occaſion a relapſe of the diſeaſe is very conveniently expelled.

412. Some moderation alſo muſt be obſerved in the exhibition of antiphlogiſtic remedies. For there is reaſon to apprehend, that by means of them the ſalutary efforts of nature by which the ſyſtem endeavours to free itſelf from the diſeaſe may be improperly checked. It is better, therefore, in general, to ſupport or excite the vital powers by means of gentle cordials, and at the ſame time to prevent or check the putrefaction by the uſe of antiſeptics. For nature being thus opportunely refreſhed more ſucceſsfully follows the expulſion of the very acrid and deadly fluid, either under the appearance of external eryſipelas, or miliary puſtules, which in ſome patients break out on the ſecond or third day, or by means of a diſcharge of ſweat, or gentle perſpiration, as Huxham affirms to have frequently obſerved. With this view he uſed to employ a certain cordial and diaphoretic mixture, compoſed of volatile ſalts, hartſhorn, and citron-juice, diluted with ſimple *aqua alexiteria*, or camphorated julap, or the like.

413. Generally the vegetable acids, as vinegar, citron, orange and lemon juice, that of barberries, raſpberries, and currants, diluted with water, and drunk abundantly, are recommended to correct and allay the putrid acrimony, and alkaleſcent tendency in the fluids. Camphor alſo, ſcor-

dium, chamomile, rue, and contrayerva remove putrefaction, and rouſe the vital powers to overcome the diſeaſe. On this account is to be preferred to all other remedies the peruvian bark, given at the beginning liberally, and at ſhort intervals, in which alone, not only in this very pernicious kind of angina, but alſo in every malignant ſpecies of eryſipelas, many at the preſent day place more reliance, than in all the other remedies put together. But when the blood and other fluids begin to exhibit manifeſt ſymptoms of diſſolution, in conſequence of which hemorrhages and diarrhœas attended with the greateſt danger to life ariſe, it is neceſſary alſo to add to them the ſtronger acids, as the vitriolic, ſulphuric, or nitrous acids.

414. The fauces and tonſils at the ſame time require attention being paid to them. Pringle on the whole rejects the employment of gargles, eſpecially of an acid kind. For he is afraid that the flow of ſaliva which proves ſerviceable may be checked by their employment. But he allows a decoction of dried figs, prepared with hydrogala, to which ſome of the ſpirit of ſal ammoniac has been added, and ſets great value upon it *. For by means of it he ſuppoſes that the ſaliva is attenuated and digeſted, and the glands diſpoſed to its ſecretion and excretion. But Home recommends the employing of gargles compoſed of gently repreſhing and diſcuſſing ſubſtances, as

an infuſion of red roſes, and a little vinegar, or a little tart red wine †. Nor do I myſelf differ much from him, as at the beginning of the diſeaſe, when the ſpots or puſtules have either not at all, or ſcarcely begun to appear in the fauces, I am in the habit of ordering the fauces to be frequently and gently waſhed with the water of ſcordium, elder, and chamomile, with the addition of a few drops of ſpirit of ſalt properly ſweetened, and a little ſimple honey or oxymel, or ſome of the ſyrup of mulberries. In the mean time, I likewiſe preſcribe milk diluted with the water of elder-flowers, to be occaſionally employed, to mitigate the acrid and burning pain, if any ſuch be preſent.

* *Diſeaſes of the Army.* † *Princ. Medic.* l. 2. p. 3. ſect. iv. § 11.

415. But when a white or aſh-coloured extenſive or mucous puſtule begins to cover the tonſils, in conſequence of which the pain is diminiſhed or diſappears, moſt practitioners are of opinion, that we ought to employ more powerfully cleanſing remedies, ſuch as honey of ſquills, tincture of myrrh or aloes, lime-water, a decoction of dried figs, lentiles, and the like. In which caſe, I prefer to any other vitriolic acid mixed with honey. For by means of it applied ſeveral times a-day with a hair-pencil to the

crusty pustule or spot, not only is its progress stopped, but likewise the separation of a putrid eschar is quickly occasioned. On the crust being removed, as soon as I perceive a clean red ulcer, I cause it to be two or three times a-day anointed merely with honey of roses, or with the tincture of myrrh, prepared with the syrup of dried roses. But if the ulcer, after being cleaned, and appearing pure, exhibit remarkable redness round it, and be very painful, I then consider it as proper to abstain from all irritating things, satisfied merely with demulcent and cooling gargles, as milk mixed with barley-water, or emulsions of the seeds of quinces; with which the fauces ought to be frequently and gently washed.

416. Van Swieten, when a particular redness appears diffused around the gangrenous pustule, mentions his having successfully employed a gargle consisting of the spirit of sulphur *per campanam*, largely diluted with water, and the *rob* of elder-berries *. But when a fetid smell proceeds from the mouth, and the gangrene appears to penetrate more deeply, he proposes anointing the parts with a mixture containing an ounce of the honey of roses, and thirty or forty drops of the spirit of sea-salt; and, in this manner, he has observed the progress of the complaint to be quickly arrested. Raullin prefers a mixture composed of rose-water, with a few grains of sal Saturni †. He advises gargling, or tipping the

ulcer ſeveral times a-day with it, and thinks that there is no occaſion for any other medicine. For in this manner they are ſaid to be diminiſhed, nouriſhed, and healed up, even when other gargles have been employed to no purpoſe; which is likewiſe confirmed by the authority of Boucher ‡. He mentions having always obtained ſurpriſing good effects from two ounces of plantain and twenty grains of ſal Saturni employed as a gargle. Others propoſe to themſelves ſimilar good effects from employing the *aqua vegeto-mineralis*, or Goulard's extract.

* In Boerh. § 811. † *Des Malad. Occaſionées, &c.* c. xiii. p. 261. ‡ *Journ. de Médec.* vol. 8. p. 556.

417. I find alſo that Majault *, after Pringle, recommends the volatile alkali in this caſe as an excellent antiſeptic; nor is it a matter of much conſequence whether it be derived from the vegetable or mineral kingdom. Majault employed the volatile alkali extracted from horſe-raddiſh, and compoſed in the form of a gargle, as follows: *Rec. aqu. commun. unc. vj. ſpirit. vini unc. ij. ſpiritus raphani ruſtican. unc. ij. mellis roſat. unc. j. ſſ. m.* He cauſed the gangrenous parts to be gently waſhed with this liquor, and its vapour to be conſtantly inhaled. In this manner, in the courſe of thirty hours, the gangrene of the tonſils was not only ſtopped, but alſo a ſlight inflam-

mation ariſing around it, the mortified part was ſeparated, and the patient recovered his perfect health in nine days. He very properly, however, cautions the phyſician againſt continuing the uſe of the volatile alkali after any of the mortified part has fallen off. However, the ſpirit of the volatile ſal ammoniac ſeems to act more powerfully. The inhaling of the vapour of it, when dropped into warm water, is not only well calculated for curing the gangrene of the tonſils and fauces, but alſo prevents its ſpreading to the larynx; nay, if it have begun to deſcend into the paſſages of the reſpiration, it becomes the only remedy upon which we can place any reliance.

* *Journ. de Med.* T. v. p. 25. *Juillet* 1756.

418. But Meade propoſes another method of treatment. Having firſt drawn blood, and purged the belly with a clyſter, he recommends making three or four pretty deep inciſions in the gangrenous part of the tonſils, and afterwards anointing them with honey of roſes, and next repeatedly waſhing them with a decoction of barley and figs *. Nor muſt we rely ſo much upon the authority of Lieutaud,—who affirms that this practice is pernicious †,—as immediately to reject ſuch a method of treatment as nugatory, or hurtful. Probably, in conſequence of being employed too late, it has not produced the deſired effect, or it has become hurtful through the fault

of the perſon who may have performed the ſcarification; for I confeſs that by employing an improper inſtrument, or by forcing the lancet too deeply in, it might ſometimes have proved hurtful. But Meade himſelf has very properly remarked that theſe ſcarifications ought to be employed at the very beginning of the complaint, before the gangrenous matter has been abſorbed, or when it has not yet extended to the larynx; for, after two or three days, the gangrene penetrates ſo deeply, and interrupts the reſpiration in ſuch a manner, that the patient's death becomes inevitable. Theſe inciſions have been frequently preſcribed by myſelf in the epidemic gangrenous angina, and with advantage. I wiſh that I had always had an opportunity of employing them in children and infants, who are perſuaded with the utmoſt difficulty to undergo the operation; for I am well convinced that I ſhould have been able to ſave the majority of them.

* L. c. cap. 2. *De Morb.* cap. 4. p. 53.

† *Préc. de Méd.* t. 2. p. 521.

419. I have already made mention (408.) of the *putrid angina*, which ſometimes ſupervenes ſymptomatically in putrid fevers, and in thoſe of a bad diſpoſition, in malignant ſmall-pox, or meaſles, as well as in other exanthematic diſeaſes. As being a ſymptom of a primary diſeaſe, it requires ſcarcely any other treatment than what is

adapted to the primary diſeaſe. But many of the remedies, both internal and external, which I have already propoſed, may be of ſervice in this caſe alſo; particular attention, however, muſt be paid to the primary diſeaſe, from the proper treatment of which the chief part of the cure of the ſymptoms, and therefore of the angina which depends upon them, is to be expected.

420. With regard to the regimen, it ought to be of that kind which is neither too hot nor too cold; for the one would favour putrefaction, and the other would oppoſe the breaking out of the diſeaſe upon the ſurface. It is adviſeable, therefore, to ſteer a middle courſe, with the view of fulfilling both intentions. The renewal of the air alſo requires the greateſt attention, that the putrid exhalations and vapours may be diſſipated. Nor muſt ſuffumigations be omitted, as by their means a medicinal and antiſeptic property may be imparted to the air, which muſt neceſſarily be conſtantly reſpired by the patient. Vinegar thrown upon a hot iron-plate affords a very ſalutary and not unpleaſant vapour. Likewiſe camphor poured into vinegar, by the application of a ſlow fire is gradually reſolved into ſurpriſingly antiſeptic vapours. The ſtrength may be ſupported by weak chicken-broth and the yolks of new-laid eggs. Whey and wine alſo contribute greatly to the ſame end. But the patient ought never to ſwallow any food, drink, or medicine,

unleſs the mouth or fauces be previouſly well waſhed; otherwiſe the putred ichor mingled with them would deſcend into the œſophagus, ſtomach, and more intimate parts of the ſyſtem, and occaſion contamination.

THE BENIGN ULCEROUS ANGINA.

421. But the practitioner muſt be on his guard againſt immediately ſetting down every kind of puſtule or ulcer affecting the tonſils and fauces as a gangrenous and malignant angina. Both puſtules and ulcers ſometimes ariſe there, which are by no means malignant, and which do not difficultly yield to remedies, nor do they readily become fatal; as Aretæus himſelf has recorded. The malignant ulcers differ from theſe, becauſe they appear broad, hollow, fatty, foul, white, aſh, livid, or black coloured, and penetrate more deeply and quickly. Hence Van Swieten very appoſitely remarks*, that there is a ſpecies of angina ſimilar to the gangrenous one, but of a mild diſpoſition, attacking the palate, uvula, and tonſils, which he had frequently ſeen, and which is eaſily removed, although theſe parts be acutely painful. A careful obſerver in the practice of medicine will pretty frequently have an opportunity of treating this complaint. It is preceded by inconſiderable fever, which is ſometimes pretty acute, and quickly diſappearing like an ephemera.

A pain then firſt attacks ſome part of the fauces. On inſpecting the throat ſome ſmall white ſpots or puſtules appear, which are red and very painful all round: but they are neither very thick, nor are the ſurrounding parts very much ſwelled. If they be neglected, however, they ſpread, corrode, and excoriate the neighbouring parts; nor are they altogether free from a fetid ſmell. Nay, melancholy inſtances are recorded of the violence of the diſeaſe having penetrated to the trachea and lungs, thus occaſioning the patient's death †.

* L. c. § 811.

† Of this kind does the firſt ſpecies of angina, obſerved by Ghis prevailing at Cremona epidemically, appear to have been. *Lett. Med.* lett. 2. 1749.

422. This complaint is of frequent occurrence in ſcorbutic people, and in thoſe with bad-conditioned fluids; ſometimes likewiſe it occurs epidemically, particularly during the ſpring-ſeaſon, and during a moiſt, warm ſtate of the weather. A particular acrid and ſubtile matter being extricated from the blood, or paſſing into it from the *primæ viæ*, or proceeding from the recrementitious parts of the perſpiration, irritating the heart and nerves, firſt rouſes a febrile motion, and afterwards is forced by the violence of the fever to the fauces, where it remains, occaſioning ſlight puſtules and mild ulcers, accompanied with an inconſiderable degree of inflammation. The

blood being thus purified by means of the metaſtaſis, and no longer irritating the heart and arteries, the fever intirely diſappears. In it, therefore, as an acrid humour occaſions the diſeaſe, it is not proper to raſhly let blood, unleſs the urgency of the pain, and difficulty of ſwallowing, indicate it. It is proper firſt to try cooling remedies, revellents, cathartics, fomentations, anodyne and demulcent gargles, and the copious drinking of barley-water. If, notwithſtanding the employment of theſe remedies, the pain, inflammation, and fever do not remit, blood may be drawn, but ſparingly and cautiouſly. We may apply to the puſtules, aphthæ, or ſmall ulcers, nearly the ſame remedies which have already been carefully enumerated (414. et ſeq.); but if they aggravate the pain, as uſually happens on their firſt application, it may be alleviated with barley-water and milk, or with the juice of the *ſempervivum majus*, to which honey, or the ſyrup of marſh-mallows, may be added. When the ulcers have been cleaned, the more acrid deturgent remedies ought to be gradually omitted, to allow them to heal up *.

* To this ſpecies ſeems to belong the epidemic ſpecies deſcribed by Regnault (*Journ. de Med.* T. lvii. *Juin* 1782. p. 528.). For in it the fauces were frequently affected with aphthæ, and ſometimes the internal coat of the trachea appeared not to be without them, as anatomical diſſection has demonſtrated: but that ſpecies of the complaint was ſomewhat more anomalous and pernicious. It did not admit of bleeding.

Sometimes, however, when ſuffocation was threatened, opening the jugular vein removed the diſeaſe. Bliſters likewiſe afforded very great relief to the part affected.

THE ANGINA TRACHEALIS, OR CROUP*.

423. There is another ſpecies of angina which is of very frequent occurrence in damp, cold countries, to which the inhabitants of Scotland, who are moſt liable to it, have given the name of *croup*, *chock*, or *ſtuffing*. It is ſuppoſed to be almoſt peculiar to infants and children, but erroneouſly, as it has been obſerved occaſionally to attack adults alſo; whom, however, it muſt be confeſſed to affect leſs ſeverely, as Ghis obſerved in the epidemy which prevailed in the year 1747 and 1748 at Cremona †. It attacks children, however, more frequently. On which account, and with reſpect to the ſuffocation with which it is attended, and its rapid tendency to death, it approaches ſo nearly to the *malignant gangrenous angina*, that ſeveral authors had conſidered it as one and the ſame diſeaſe. But that the diagnoſis between both may be the more eaſily eſtabliſhed, it will not be improper to give its deſcription. Rejecting the other leſs proper terms, I have preferred denominating it from the ſeat which it occupies; adding, however, the Engliſh name, in order to diſtinguiſh it from

the other ſpecies of cynanche from which it in fact differs.

* Synonyms.

The *Suffocatio ſtridula* of Home, *An Inquiry into the Croup*, Edinb. 1765. The *Croup* of Buchan, *Domeſt. Medicine*. The *Cynanche ſtridula* of Walhbom, *Barattelſer till Rikſens ſtander, an.* 1765. The *Angina ſuffocatoria* of Engſtroem, *Barattelſer till Rikſens ſtander vorand Medic.* &c. *an.* 1767. The *Angina ſtrangulatoria, & morbus ſtrangulatorius* of ſome authors. The *Angina polypoſa*, or *membranacea* of Michaelis, *De Angin. Polyp.* Gotting. 1778. The *Alterum anginæ epidemicæ genus, an.* 1747, 1748, of Ghis, *Lett. Med.* let. 2. Cremon. 1749, May it be the *Angina maligna epidemica* of Malouin? *Mem. de l'Acad. Roy.* 1746.

† Ghis, *Lett. Med.* let. 2. Regnault, *Journ. de Med.* vol. lvii. p. 527. where likewiſe adults are ſaid to have fallen into this diſeaſe.

424. It generally prevails epidemically, ſometimes likewiſe ſporadically. But as it occurs moſt frequently in infants and children, I ſhall mention in what manner it ariſes and proceeds in them particularly, for it will eaſily from thence appear in what manner it attacks adults alſo. In my deſcription of the complaint I ſhall follow Michaelis, who has given by far the moſt accurate hiſtory of this complaint, and illuſtrated it with the moſt judicious inſtances of it. Infants and children, he obſerves, who are about being attacked with the complaint, loſe their natural hilarity and propenſity for play. Afterwards they become melancholy and peeviſh, and are hotter than uſual.

Their tongue is covered with white mucus, and ſometimes is very foul. In a ſhort time they complain of ſome pain in the trachea, which is generally dull, though ſometimes pungent. Frequently the fore-part of the neck, which correſponds with the affected part of the trachea, appears ſomewhat ſwelled, and, on being preſſed, the patient feels a ſenſe of pain, although not very acute, and the face likewiſe becomes turgid and red; there is conſiderable thirſt; great drowſineſs and headach are preſent.

* *De Angin. Polypoſ.* p. 10. *et ſeq.*

425. To theſe incipient ſymptoms is ſhortly added a fever, accompanied with a very quick and hard pulſe, hoarſeneſs, a ſhort cough, at firſt always dry, a trickling of blood from the noſe, and other catarrhal ſymptoms. Sometimes ſooner, ſometimes later, a difficulty of breathing ſupervenes, which is at firſt very ſlight, but afterwards becomes exceedingly ſevere, threatening ſuffocation. No manifeſt cauſe of the injured reſpiration and ſuffocation can be detected; for, on inſpecting the fauces, nothing morbid is diſcoverable, unleſs that they ſometimes appear ſomewhat ſhining, or are covered with a tenacious mucus. This difficulty of breathing, which is generally deep, ſeldom quick, is accompanied with a peculiar indeſcribable ſound, which is very readily recogniſed by thoſe who have once heard it. If it can be compared to any ſound, it will

be found to reſemble none more than that which is made by chickens. In ſome patients that ſound accompanies every inſpiration; in others it is only heard when they cry, or cough. Beſides this difficulty of breathing, the patients are frequently diſtreſſed with nauſea, or with vomiting itſelf, by which a great quantity of very tenacious matter is thrown up. Sometimes, however, the vomiting is empty, nothing being brought off. In a good many caſes the hands and feet ſwell; the tonſils ſcarcely ever, or, if at all, very little.

426. All theſe ſymptoms (425.) very rapidly increaſe to ſuch a degree that the diſeaſe, which a few hours before did not ſeem to require the aid of medicine, now frequently defies every method of cure. For ſuch is the anxiety and difficulty of breathing, that death from ſuffocation is every moment to be dreaded. In the mean time the deglutition remains uninjured, or, if it ever be affected, it is very ſlightly. The urine, which was formerly clear and watery, then depoſits a white ſediment; and the pulſe, in which quickneſs, hardneſs, and ſtrength were conjoined, becomes weak, very ſoft, or even intermitting. In the mean time it not unfrequently happens that, in conſequence of the cough, not only a very copious, white, caſeous, tenacious matter, but alſo hollow, tubular, membranous concretions, perfectly reſem-

bling the figure of the aſpera arteria and bronchia, are thrown off. In conſequence of which the reſpiration, in particular, is very much relieved, and almoſt all the ſymptoms changed for the better. Nay, if the whole of this glutinous matter, or membranous concretion, or even if great part of it, be coughed up, the patient is immediately ſnatched from the jaws of death, and recovers. But if the greater part of the glutinous, caſeous, or membranous matter be ſtill retained, or, although thrown off, be too quickly regenerated, all the ſymptoms in a ſhort time are aggravated to ſuch a degree, that the patient, whom a perſon would have believed to have been reſcued from all danger, being again overwhelmed with the violence of the diſeaſe, is at length carried off.

427. It is likewiſe to be remarked, that not unfrequently, all of a ſudden, and without any excretion of the obſtructing matter, all the ſymptoms become ſo much better, that the reſpiration is rendered freer, or intirely natural, and the infants or children can riſe out of bed, and walk about; and that, ſhortly after, this fallacious remiſſion of the ſymptoms is ſucceeded by a freſh paroxyſm, frequently ſo ſevere that the child, who one or two moments before was amuſing himſelf with his playfellows, or taking food with an excellent appetite, is ſuddenly cut off. Others, again, experience a ſlow death, their anxiety increaſing,

and their reſpiration always becoming more difficult, their cough ceaſing, and their pulſe becoming intermitting and tremulous. But this kind of ſlow death is of rare occurrence. A ſymptom almoſt uniformly characteriſing the complaint is, that to the very laſt hour of life the patient retains the perfect uſe of his ſenſes and reaſon. The favourable or fatal termination of the diſeaſe happens at no fixed period. A great many die upon the third or fourth day, nay, ſometimes upon the ſecond; notwithſtanding of which the following days are not free of danger; for Halen mentions an inſtance of the complaint's having proved fatal upon the eighteenth day. A good many are ſaid to have recovered after the third or fourth day; others recover more ſlowly. Perſons more advanced in life experience a more lingering complaint. A boy of twelve years of age is ſaid to have recovered after labouring five weeks under the complaint, in conſequence of throwing up a foreign body *. But the tailor mentioned by Tulpius lingered under the complaint much longer.

* *Act. N. C.* T. i.

428. So far does the deſcription of Michaelis go, which was collected both from his own obſervations as well as from thoſe of others. And as there is a very great difference between it and that which was long ago publiſhed by Ghis, who

was among the firſt, and in Italy, probably, the only perſon who accurately obſerved this very fatal diſeaſe prevail epidemically in the city of Cremona; I thought that it would be worth while, and to the honour of the Italian practice of medicine, which is unjuſtly ſlighted abroad, to illuſtrate the hiſtory of the complaint already delivered, by adducing his obſervations, by which we ſhall be very much aſſiſted, both in the diagnoſis and cure of this very ſhocking and fallacious diſeaſe. I ſhall endeavour to accompliſh this in as few words as the author himſelf has employed, that is, as briefly as poſſible. The ſpecies of angina which, in the year 1747 and 1748, prevailed epidemically at Cremona, was fallacious and deadly, but did not affect the fauces or injure the deglutition. It therefore proved fatal to ſome thoughtleſs people, and ſeveral children, who were deprived of a proper method of treatment. Unuſual thirſt, a pale face, a very rough and conſtant cough, without the uſual ſound, generally dry; difficulty of breathing; heat and pain almoſt always diſtreſſing the larynx; fever, conjoined with the greateſt heat internally, and very little externally; a ſmall and generally irregular pulſe; great reſtleſſneſs; a clangous voice, and ſometimes hiſſing reſpiration, were ſymptoms in common to all, which ſhortly becoming more violent, were joined by a very irregular and intermitting pulſe, dry ſkin,

and coldneſs of the extremities; the patients could not lie down, or remain at reſt in a place, and drew their breath with the utmoſt difficulty and rapidity, which was accompanied with a ſhocking rattling ſound. For by opening their mouth wide, and drawing back the neck, which was ſwelled, and bringing the trachea, eſpecially the larynx, as near as poſſible to the lower jaw, and puſhing it outwards with great violence, they performed their reſpiration; or, which is the ſame thing, they experienced completely the *reſpiratio ſublimis*, as Hippocrates called it; and in this miſerable condition ſome were ſuffocated on the third or fourth day, others upon the fifth, and ſome even on the ſecond or ſeventh day, from the beginning of the complaint.

429. But the cough is ſaid to have been *generally dry*; becauſe a copious ſpitting, which occurred in ſome, was not brought off from the trachea or larynx, but from the throat itſelf. For a great quantity of lymph, expreſſed from the irritated ſalivary glands and mucous follicles, was collected there. But if ever any thing was thrown off by means of the cough, from the reſpiratory paſſages, it was like a membrane, extremely ſimilar to thoſe gelatinous concretions which are found in the præcordia after death, under the name of the *pleuritic coat*, or *pſeudo-polypus*. A girl of ſix years of age, the day be-

fore her death, in conſequence of a ſuffocating cough, threw off from the larynx a conſiderable piece of white ſolid matter, which exactly reſembled the form and hollow of the whole trachea and bronchia. In fact, if any one eſcaped from ſo great a danger, the criſis took place either by a copious ſpitting of lymph tinged with blood, or by ſweat, or urine, and by a metaſtaſis to the lungs: which, although in the other ſpecies it be generally mortal, in this one, if it ſurvived the ſeventh day, terminated in a lingering, but ſalutary ſuppuration. For the pus being gradually drawn off by means of the cough, and the abſceſs being thus evacuated, the patient was ſaved and recovered. Enough, however, concerning theſe ſymptoms which occurred in the epidemy of Cremona.

430. It remains for me, in order to complete the hiſtory of the diſeaſe, and to properly aſcertain its nature, to briefly ſhew what the appearances on diſſection are. The external appearance of the body is ſuch as is obſerved in thoſe which have ſuffered ſtrangulation: the face is generally livid and ſwelled; the eyes prominent and turgid; the veins of the neck are found diſtended with blood, which alſo occaſions a ſwelling and redneſs in the fore-part of the neck. The fauces are contaminated with no taint or inflammation *, excepting that ſometimes the glands at the root of the tongue become turgid, and

their excretory ducts open too wide †. Likewiſe a great quantity of mucus about the glottis, obſtructing every thing, is generally found ‡. The trachea immediately under the larynx is ſometimes found inflamed all over, even to the extremity of the bronchia ‖. Sometimes it is found free of any mark of inflammation §. But the tubular membrane, or membranous concretion, lining the internal ſurface of the trachea, is at one time found to be very long, paſſing from the larynx itſelf to the laſt diviſions of the bronchia, and when drawn out, it intirely reſembles the figure of the containing part; ſometimes, and indeed more frequently, it is found lying under the larynx only, and much ſhorter; in other caſes it occupies a ſmall ſpace in the arteria aſpera ¶; in ſome caſes, being formed in the middle of the trachea, it reſembles a part of a ſmall white concretion, very like what has been coughed up **; ſometimes it is very thin; ſometimes it is ſo thick as to obſtruct the whole cavity; ſometimes it is ſoft and eaſily torn; or, on the contrary, very tenacious aud glutinous. It is generally of a whitiſh and ſhining colour, ſometimes variegated with red ſpots, and ſometimes it is of an aſh or brown colour. It no where appears to adhere to the internal coat of the trachea; ſo that it cannot be conſidered as its inner coat, which is found intire beneath. Authors are not agreed as to its ſtructure. Some affirm that it is compoſed of

blood-veſſels, others that it is compoſed of longitudinal or ſtriated fibres. But if it be properly examined, it will be pronounced to be an inorganic ſubſtance, compoſed of the mucous and lymphatic fluids, not unlike the polypous concretions which ſometimes are thrown up by patients labouring under peripneumony, and becauſe it intirely excludes the nature of a true membrane, which is quite ſoluble in ſoap and water. Not unfrequently that membranous concretion is accompanied with water and a frothy fluid; nay, with water itſelf. Sometimes likewiſe the glands which are placed about the bronchia, at their entrance into the lungs, are found to be very numerous, and much indurated. In many patients, the lungs are perfectly ſound; in others they are ſound, to be ſure, but adhere to the pleura, and are ſomewhat turgid; in others they are ſuffuſed with much redneſs, and filled with a great deal of blood; or they are of a dark brown colour, and marked all over with black ſpots ††; ſometimes they are ſo red as to appear inflamed even externally, their colour being very red, like that of eryſipelas; nor do the pleura and diaphragm in ſome parts remain free from that inflammation, namely, in thoſe parts which correſpond with the more ſeverely inflamed part of the lungs, or their adheſion ‡‡. Nor is it a rare occurrence for the lungs to be full of a white matter, with which all the branches of the bronchia are obſtructed. On removing this

matter, ſome blood is eaſily forced out by preſſure. In ſome patients likewiſe, they are found full of pus, or inflated with a quantity of air ‖‖. The heart, pericardium, and mediaſtinum, and thymus, are generally perfectly ſound, excepting that the vena cava and right cavities frequently abound with a great deal of black blood, or pſeudopolypi; while the left cavities are empty §§. And there is ſometimes a greater or leſſer effuſion of water in one or both cavities of the thorax ¶¶. In the abdomen, the appearances are all natural. In the head, both the cutaneous veſſels, and thoſe of the pia mater, and choroid plexus, are unuſually varicoſe and dilated, as they are found to be in bodies which have been ſtrangled.

* Ghiſ. l. c. Michael. l. c. p. 10. to 22. † Michael. *ib.* ‡ Michael. l. c. ‖ Ghiſ. l. c. Michael. l. c. § Michael. l. c. ¶ *Id. ib.*
** Ghiſ. l. c. †† Michael. l. c. ‡‡ Ghiſ. l. c.
‖‖ Michael. l. c. §§ Ghiſ. l. c. ¶¶ Michael. l. c.

431. From the obſervations already made in the hiſtory of the diſeaſe, and from the appearances upon diſſection, of which mention has already been made, we may ſufficiently collect that the ſeat of the diſeaſe is confined to the aſpera arteria; and therefore, that the angina trachealis is ſometimes phlegmonic, ſometimes, and probably more frequently, eryſipelatous, ſometimes only cattarrhal, the principal ſymptoms of which

are fever, pain or heat in the trachea itſelf, a cough, at firſt dry, and without the uſual ſound; a hoarſe, ſhrill, or clangous voice; a ſound attending the inſpiration, like that which chickens make; violent elevation of the larynx, and its readily paſſing into a fatal ſuffocation; and laſtly, a ſymptom which is peculiar to the complaint, the frequent rejection by cough of a lymphatic concretion, obſtructing the trachea and bronchia, under the appearance of a tubular membrane. But it is more probable that this is a membranous concretion, partly from the copious and denſe mucus which the glands and follicles of the trachea diſcharge, partly that it is compoſed of the lymphatic fluid exhaled by the extremities of the arteries, or exuded from their inorganic paſſages having been coagulated; and that it aſſumes the form of the cavities and canals in which it is collected *.

* Ghis.

432. It likewiſe appears evident that its nature is not uniform, but various, as the temperament, habit of body, age, ſex, time of the year, weather, and other prediſpoſing cauſes vary; and that there is not one pathognomic ſymptom by which the complaint can be diſtinguiſhed, but that its diagnoſis muſt reſt upon the combination of the principal ſymptoms *. I cannot deny, however, that this ſpecies of angina may be readily confounded with other kindred diſeaſes,

namely, with the pure inflammatory angina trachialis (375. 376.), with the catarrhal or ferous ſpecies (309.), with that which ariſes from different things falling into the larynx (371.), with the ſuffocative catarrh of Ettmuller, and with the convulſive cough in Italy, commonly called *Coqueluche*, &c. But each of theſe affections are diſtinguiſhed by particular marks. The pure inflammatory angina trachealis is not ſo deceptious, but manifeſtly more acute, and accompanied with ſymptoms of actual inflammation. It is accompanied with a more acrid and troubleſome pain in the larynx and trachea; the inſpiration is not accompanied with any peculiar hiſſing, ſuch as we have mentioned, nor with a ſound like that which chickens make; nor does it reject by cough the membranous and tubular concretions, already mentioned †.

* Michael. l. c. † *Id. ib.* p. 128.

433. This ſpecies of angina is likewiſe diſtinguiſhed from the catarrhal or ferous one, becauſe in the latter the fauces and lymphatic glands ſwell; the voice becomes hoarſe, not ſtridulous; the cough is without the uſual ſound; the reſpiration, if it ſuffer any injury, never increaſes to ſuch a degree as to threaten ſuffocation; and, laſtly, no membranous or tubular ſubſtance is diſcharged. This ſpecies of the complaint is diſtinguiſhed from that cauſed by foreign bodies falling into the aſpera arteria, merely by the

anamneſis, or retroſpect of preceding circumſtances. It differs alſo from the convulſive aſthma, becauſe the latter commences immediately with a moſt ſevere attack, while the former begins with ſmall and uncertain attacks; becauſe the peculiar hiſſing, change of voice, and ſtridulous ſound, are abſent; no pain is felt in the aſpera arteria; the acceſſion returns at ſtated intervals; the urine is voided thin, watery, and frequently; the pulſe is ſmall, contracted, ſpaſmodic, and not febrile; nor is any membranous ſubſtance diſcharged. It is not difficult to diſtinguiſh it by nearly ſimilar marks from the ſuffocating catarrh of Ettmuller, and likewiſe from the convulſive cough *.

* Michael. l. c. p. 122. 123. 126.

434. A perſon is more apt to be deceived by this angina trachealis inducing ſtrangulation, while in the manner of its occaſioning ſuffocation it in ſome degree reſembles the malignant gangrenous angina, when it has gone the length of the larynx. But, upon comparing the deſcription of each, all danger of committing an error will vaniſh. Let the practitioner, firſt of all, attend to the ſymptoms of putrefaction in the malignant gangrenous angina, the very foul ſmell of the mouth, the nauſea, vomiting, the ſtools, and very fetid ſweats, the purple redneſs of the throat, the ſmall puſtules which generally break out upon the fauces on the firſt and ſecond day,

or the white, mucous, cineritious, and livid ſpots quickly covering the whole tonſils, and ſpreading wide, and the eſchars ariſing from thence gradually falling off, and leaving beneath them phagedenic ulcers. For from theſe marks it will appear that there is a very wide diſtinction between them. Let him, moreover, remark that in the gangrenous angina the deglutition is affected more than the reſpiration; that the trachea is affected with no pain, and that the nature of the voice is different; that delirium frequently ſupervenes; and that thoſe tubular membranes are not diſcharged; and if ever ſome pieces of membranes are coughed up in the gangrenous or ulcerous angina, as ſometimes happens, that theſe are really parts of membranes, although not tubular, but torn from the fauces and puſtules, and which are by no means ſoluble in ſoap and water *.

* *Id.* l. c. p. 113.

THE CURE.

435. As this diſeaſe, which is ſo fallacious in its nature, and ſo rapid in its tendency, is followed by ſudden and almoſt inevitable ſuffocation, which terminates the patient's exiſtence in a miſerable manner, and ſpares very few, if in any caſe, aſſuredly in this, the greateſt diſpatch is neceſſary to avert as far as poſſible the danger which is threatened. If, therefore, there be any hope,

it depends intirely upon the drawing of blood at the beginning of the diſeaſe, which frequently, particularly when drawn from the arm, alone completely removes the complaint; and it may be repeated, even in children, as often as the pulſe and other ſymptoms indicating it urge its employment *. Leeches applied to the neck, and ſcarifications, advantageouſly diminiſh the quantity of the blood, and prove leſs detrimental to the ſtrength. In the epidemy which prevailed at Cremona, as we are informed by Ghis †, no one eſcaped unleſs by having recourſe immediately to copious and repeated bleeding, and a ſcarifying cupping-glaſs afterwards applied above the larynx, together with pediluvia, and ſmall but frequent draughts of ſome tepid pectoral water, and a linctus of freſh oil of almonds, expreſſed without fire, by which the back-part of the aſpera arteria is cheriſhed, moiſtened, and ſoftened. By this method of treatment he obſerved not only ſome boys, but likewiſe ſeveral adults, to whom he had been called at the beginning of the diſeaſe, reſtored to health. Of theſe ſome recovered ſhortly after coughing up a great deal of lymphatic matter tinged with blood; others recovered in conſequence of univerſal ſweats, and a great diſcharge of urine; others, again, in conſequence of a metaſtaſis taking place to the lungs, which terminated in a ſlow but ſalutary and laud-

able ſuppuration, ſuch as Hippocrates has mentioned ‡.

* Michael. l. c. p. 194. 195. † L. c. ‡ *Aphor.* ſect. v. 10.

436. At the beginning of the diſeaſe anodynes and diaphoretics are recommended as removing its cauſe. Hence opium, camphor, and tartar-emetic, are preſcribed in ſmall and divided doſes, after the manner of an alterative *; but the *potus ſaponaceus antiphlogiſticus*, nitre, oxymel, and injections, are ſuppoſed to be much better calculated for the purpoſe. Nor are cathartics to be omitted, if the gaſtric and ſerous colluvies require being drawn off; under which head comes magneſia alba, with ſugar, the pulp of caſſia, lenitive electuary, and manna diſſolved in whey. The employment of emetics is not ſo ſafe; and if it ever appear proper to excite vomiting, it ought to be done with the utmoſt caution, otherwiſe it might accelerate the ſuffocation †. Bliſters applied about the neck and its ſides, or to the fore, or even hind-part of it, have their advocates ‡. It is likewiſe aſſerted by ſome that theſe parts may be advantageouſly anointed with oil and ſpirit of ſal ammoniac ‖. Such are the remedies proper in the firſt ſtage of the complaint. In the ſecond ſtage, however, when there is both reaſon to apprehend ſuffocation coming on, and when the air-paſſages are alſo obſtructed with a great quan-

tity of gluten and mucous fluid, we muſt ſpeedily have recourſe to expectorant and inciding remedies. Among theſe the chief rank is held by oxymel of ſquills, by the *ſulphur antimonii auratum* of the third precipitation, by the gum ammoniac, by the warm vapours of vinegar being inhaled, and the like. Theſe remedies, however, muſt not be employed indiſcriminately, but a judicious ſelection of them ought to be made. If ſymptoms of real or eryſipelatous inflammation be rather preſent, it will be ſafer to employ milder and blander medicines; while the ſymptoms of a catarrhal and phlegmatic affection require ſomewhat more decided practice, and the employment of more acrid remedies. Some even in this caſe do not heſitate to propoſe the exciting of vomiting. But prudent phyſicians are aware of the great danger of employing emetics when ſuch immediate ſuffocation is apprehended §. In the laſt extremity, all other remedies proving unavailing, tracheotomy alone affords ſome hope, although it is not approved of by all ¶ **.

* Michael. l. c. p. 197. † *Id. ib.* p. 203. ‡ *Ib.* p. 207. ‖ *Ib.* p. *eod.* § *Id.* p. 210. ¶ *Ib.* p. 217. 220.

** An inſtance of tracheotomy having been ſucceſsfully performed in a boy threatened with ſuffocation, was communicated to me in a letter which I received from Locatelli, a phyſician of great expectations, then reſiding in London, who obſerved it executed with the greateſt dexterity by Mr Andrée, a celebrated ſurgeon of that city. It was performed in the fol-

lowing manner: He firſt divided the integuments by making a longitudinal inciſion from the thyroid gland towards the top of the ſternum, about three inches long. Having next ſkilfully laid bare the trachea, he tranſverſely divided the connecting membrane between its ſecond and third ring, and made a ſimilar inciſion between the fourth and fifth rings, ſo that two rings were left between each tranſverſe inciſion. From the fore-part of theſe, by making two other lateral inciſions, he took out a ſquare piece. By which means a ſufficient opening was made, both for inſpiring and expiring the air, and for the expulſion of the membranous concretion which threatened ſuffocation. From this opening immediately iſſued a conſiderable quantity of pus, but no part of the membranous concretion. Two days afterwards ſome portion of it came out through this artificial opening; ſo that what remained within was eaſily extracted by the hand.

THE CONVULSIVE ANGINA OF BOERHAAVE *.

437. THIS is the conſtriction of the fauces or larynx and pharynx, occaſioned by a ſpaſm of them. Hence it is likewiſe named *ſpaſmodic*; or, becauſe it commonly attacks women and hypochondriacal men, it is likewiſe denominated *hyſterical*, or *hypochondriacal*.

438. It is known by the ſenſe of conſtriction, or that of a globe or other body, ſometimes oblong and cylindrical, ſticking in the fauces; by the inflation or rigid tenſion of the neighbouring parts, occaſionally accompanied with ſome pain; by the difficulty of breathing or ſwallowing co-

* *De Cogn. et Cur. Morb.* § DCCCXVIII.

ning and going at intervals; by the interruption of the voice, or aphonia; by a ſmall, hard, weak, hidden, ſlow, and by no means febrile pulſe; by the chillineſs of the external parts; ſometimes by trembling; by borborygmi, and pains of the belly or ſtomach; by pale urine, voided frequently and copiouſly; by yawning, ſtretching, and other ſymptoms of convulſive affections. It is preceded by thoſe cauſes which immediately irritate the nerves or fibres going to the larynx and pharynx, or the origin of the nerves or their branches in the lower part of the abdomen, as the inſpiring of the exhalations and vapours of ſulphur, nitre, and vitriol; the ſwallowing or eating of acrid things; the matter of herpes, arthritis, and itch being forced in; morbid conditions of the uterus and abdominal viſcera, eſpecially of the ſtomach; the diminution or ſuppreſſion of the menſes; hypochondriaſis; the paſſions of the mind, particularly grief, or long-ſuppreſſed anger.

439. This diſeaſe is generally free of danger, unleſs it ariſes from ſome morbid affection which of itſelf is very ſevere. But it proves diſtreſſing to the patients in conſequence of its duration and obſtinacy, and frequently recurs after a ſhort interval, on any ſlight exciting cauſe being applied. The cure ought to vary according to the variety of the evident cauſes, and it may be obtained by employing thoſe remedies which I have elſewhere

recommended in the cure of the convulſive affections. Hence ſometimes pure open air, together with oily and demulcent remedies, ſometimes cathartics, ſometimes bleeding, ſometimes antihyſterical remedies, ſometimes purifiers and diaphoretics, are adapted to the cure. Generally when there is a derangement of the nerves, and a hyſterical affection, ſtrong-ſmelling things are applied with advantage to the noſtrils, dry cupping-glaſſes to the legs and thighs, and the feet and hands are immerſed in warm water; while the belly is relaxed by means of bland injections. A young woman of ſenſible habit, who received no relief from antihyſterical remedies, after having been incapable of ſwallowing any thing for forty-eight hours, was immediately cured by Van Swieten, by means of a cupping-glaſs, without ſcarification, being applied to the back-part of the neck *. A convulſive angina, which depended upon indigeſtion of the *primæ viæ*, was relieved by means of vomiting and purging, which otherwiſe ought not to be readily adminiſtered †. When other remedies prove of no ſervice, an epiſpaſtic or veſicatory applied to the occiput ſeldom fails of producing the deſired effect. Tozzetti was repeatedly very ſucceſsful in removing this diſeaſe, when it occurred in women of a very exquiſite habit, by obſerving the following plan ‡: He firſt cauſed blood to be drawn from a vein in

the foot, after which he applied cupping-glaſſes, with ſcarification, to the ſcapulæ. Laſtly, when the complaint ſtill continued obſtinate, he raiſed large bliſters in both arms, or in both calves, by means of cantharides. It is ſurpriſing how quickly by theſe means the convulſive angina is overcome.

* *In* Boerhaave, § 818. † *Edinb. Med. Eſſays*, vol. i. ‡ *Obſerv. Med.* p. 113. *et ſeq.*

THE PARALYTIC ANGINA.

440. If the muſcles ſubſervient to the motions of the tongue, pharynx, and œſophagus be attacked with paralyſis, the power of ſwallowing becomes affected, or is intirely loſt. This complaint is named the *paralytic angina*. It ſeldom happens, according to Van Swieten, that in this complaint the reſpiration ſuffers any injury, becauſe the muſcles ſubſervient to reſpiration ſeem to belong rather to the thorax than to the fauces, of which angina is the peculiar diſeaſe; unleſs the *muſculi ſcaleni* be affected at the ſame time. This ſpecies of angina is conſequent to hemiplegia, paraplegia, apoplexy, and other affections inducing the paralyſis of particular parts.

441. In it the meat, drink, and ſaliva being forced back, flow out again by the noſtrils or mouth, not without endangering ſuffocation. There is no ſenſe of conſtriction in the fauces,

no interior or exterior ſwelling, no fever. Nor can the patients take any thing into the fauces, or they do ſo with difficulty, and ſlowly, according to the greater or leſſer degree of paralyſis. Solids, however, are leſs difficultly ſwallowed than liquids. Perſons in the ſupine poſture are more diſtreſſed. If a ſmall wax-taper, or a piece of flexible whalebone, be introduced into the fauces, finding no obſtacle, it eaſily paſſes through the œſophagus, and might be freely thruſt down all the way to the ſtomach.

442. It is likewiſe perfectly clear that this complaint proceeds from luxation of the vertebræ of the neck. But in that caſe, if the luxation be perfect, eſpecially in adults, a fatal paraplegia is at the ſame time preſent. The luxation ought therefore to be imperfect, and indeed internally, before a paralytic angina can be ſaid to ariſe. It ſcarcely takes place, however, as Van Swieten has very juſtly remarked, unleſs in the upper vertebræ of the neck, and in young people with delicate habits, in whom theſe vertebræ are more cartilaginous, and connected together by weaker ligaments *. This luxation has not only been mentioned by Hippocrates in his *Aphoriſms* †, where he ſpeaks of the diſeaſes of young people, but alſo in his *Prognoſtics*, where he ſays: "In perſons labouring under angina, the vertebræ of the neck inclined inwards, in

ſome caſes more, in others leſs; and there was an evident cavity formed in the neck; and when touched at this part it felt painful ‡." And although that diſeaſe occurs ſeldom, Van Swieten had once an opportunity of ſeeing it in a child ten months old, whoſe head was inclined back, while the throat was prominent, and a manifeſt cavity appeared in the breaſt. The child could not ſwallow any thing. The complaint had taken place at this time, after violent convulſions, in conſequence of which the vertebræ of the neck were eaſily removed from their place in ſo delicate a frame, as we frequently obſerve luxations of the bones occurring even in adults from this cauſe.

* Sect. 818. *citat.* † Sect. 3. aph. 26. ‡ L. 1.

443. Generally thoſe who are affected with the paralytic angina die in conſequence of the gradual waſting of the body. Sometimes, however, in proceſs of time, and by the joint operation of nature and art, they are reſtored to health. We judge of the degree of hope or danger from the cauſe by which the paralyſis is occaſioned. The cure, if it admit of any, is to be attempted by thoſe remedies by which I have ſhewn that the paralyſis of other parts is to be treated. But becauſe the deglutition is impeded, or very much injured, ſo that the patients can neither eat nor drink, they ought to be nouriſhed either by means of a tube introduced into the ſtomach, through which

liquid food is conveyed, or by nouriſhing injections, as they are called, or by fomentations applied externally to the body, conſiſting of nutritious fluids, as milk, wine, or ſoup; for the veſſels are every where open, which may abſorb ſomething, and by means of the lymphatic veins ſupply the blood. The bath alſo is very well adapted to this purpoſe. When a perfect luxation of the vertebræ of the neck takes place, in which the ſpinal marrow is not only preſſed, but intimately deranged, and at the ſame time a great degree of inflammation and fever are preſent, Aegineta has informed us that no hopes of a cure remain *. But in the imperfect and leſs ſevere ſpecies of the complaint Aetius adviſes us to attempt the cure by fixing a cupping-glaſs about the firſt vertebræ of the neck, and frequently pulling it, with the view of replacing the vertebræ in their original ſituation †. With the ſame view, when a ſlow luxation of the vertebræ and protruſion of them inwards has taken place, and no inflammation is preſent, it may be proper, by applying the hand to the chin and back-part of the head, or by means of a proper bandage, to raiſe the patient every day, and ſuſpend him for a while, that by means of the weight of the body the injury ſuffered by the ſpine may be corrected.

* L. 3. c. 27. † *Tetrab.* 2. ſerm. 4. c. 47.

THE ANGINA OF VALSALVA,—OR THAT FROM LUXATION OF THE OS HYOIDES*.

444. The luxation of the os hyoides, and its impeding deglutition, was mentioned firſt of all by Valſalva†, and afterwards by Molinell‡, of whom the former has publiſhed one, the latter two inſtances of the diſeaſe, that no doubt about it might remain. The os hyoides, therefore, is luxated, not like the humerus, or phalanges of the fingers, or other bones, the articulations of which are received in ſome cavity, from which, when they are luxated, they fall out, but in the ſame manner as bones connected by cartilages, as the bones of the pubes, coccyx, and noſe. For the coccyx is ſaid by ſurgeons to be luxated when it is ſo diſtorted that it requires the aſſiſtance of the hand to reduce it to its place. The ſame thing happens to the os hyoides, and in particular to its cartilages.

* Synonyms.

The *Dyſphagia Valſalviana* of Sauvages, *Noſol.* cl. vii. n. xvii. I have ſuppoſed that that complaint is to be referred to angina, becauſe the impediment is in the fauces, and not ſituate lower down. For thoſe difficulties of ſwallowing, the cauſe of which is diſtantly ſituate from the fauces, I ſuppoſe merely to belong to *dyſphagia*, as I ſhall ſhew in the chapter concerning the latter affection.

† *Tract. de Aur. Human.* c. 2. n. 20. ‡ *Comm. Inſtit. Scient. et Art. Acad. Bonon.* T. v. P. ii. p. 1.

445. The os hyoides and its appendages are luxated either internally or externally. In whatever manner the horns of this bone or its appendanges are diſtracted or diſplaced, it neceſſarily follows that the pharynx alſo, which is joined with the os hyoides by means of the hyopharyngeus muſcle, muſt be diſtracted, and, when thus diſtracted, muſt injure and retard the deglutition. If any violence, therefore, be applied either externally or internally to the os hyoides, it will be very apt to diſtort it, or ſome parts of it, and therefore will luxate it. Thus a thick hard lump of meat, or any thing ſimilar, taken into the fauces and œſophagus, and ſwallowed, muſt neceſſarily force that bone or its cartilaginous appendages outwards, which will be another kind of luxation peculiar to the os hyoides. On the other hand, the violent introduction of the hand into the throat, or an external blow or preſſure upon it, will bend the ſame bone or its cartilages inwards, and move them out of their natural ſituation; which will be another ſpecies of luxation to which theſe parts are ſubject.

446. When that happens not a drop or bit of any thing can be ſwallowed. Sometimes, likewiſe, violent and frequent efforts to ſwallow take place, ſuch as a perſon would experience who had a bone ſticking in his throat; and the diſtreſs of this is ſometimes ſo great as to give riſe to an univerſal, copious, and cold ſweat, and to occa-

ſion a ſmall, weak pulſe. The reſpiration, however, and faculty of ſpeech, are but little affected. The larynx alone appears diſplaced and deranged. Likewiſe ſome ſwelling is obſervable on one or other ſide, or between the ſterno-maſtoideus muſcle, and in the part where the elevation is a pain is felt. If to theſe ſymptoms be added the abſence of the marks peculiar to the other ſpecies of angina, the more certain will be our judgement concerning the luxation of the os hyoides, and the difficulty of ſwallowing occaſioned by it.

447. The caſe of Valſalva, to which I have already alluded, was as follows. " A woman in the town of Bologna, who had ſwallowed a mouthful of inſufficiently-chewed meat, perſuaded her friends that ſhe was diſtreſſed with the lump ſtill ſticking in her throat, to remove which ſhe tried various remedies, both by the hand and afforded by medicines, but to no purpoſe. Three days had elapſed from the time when ſhe could ſwallow any meat or drink, at which time I was called in. On weighing every particular, as I ſuſpected that a luxation of the os hyoides had taken place in ſome of the cartilaginous appendages, I handled the part as my knowledge of the anatomy of it directed, and immediately, in conſequence of handling it once or twice, every thing was reſtored to its proper ſtate; inſomuch that the woman, who had been juſt deſpaired of,

was immediately enabled to ſwallow ſoup and food without any inconvenience." So far Valſalva goes. This paſſage affords an inſtance of luxation of the os hyoides being induced by the application of an internal cauſe. The caſes of this kind of luxation mentioned by Molinell were cauſed by external violence. The firſt of them is as follows: "When a ſurgeon, of about twenty-five years of age, of a ſlender habit of body, was attempting to wreſt ſomething from the hands of a ſtouter man, the other applied his hand to the ſurgeon's neck, and in their mutual ſtruggle preſſed it violently at the right ſide of its fore-part. After this the ſurgeon could ſwallow nothing, either ſolid or liquid. An hour afterwards he applied to me for aſſiſtance. For the difficulty of ſwallowing, which I have juſt now mentioned, ſtill continued, accompanied with the moſt violent and conſtant efforts to ſwallow, notwithſtanding that he took nothing into the mouth. Though otherwiſe a young man of ſtrong nerves, he was ſo overpowered by his ſituation, that he became bedewed all over with a copious cold ſweat, and his pulſe ſunk very low; nor did he ſuppoſe that he could live much longer unleſs the conſtriction at his throat remitted. But I ſhould not have pronounced his ſpeech and reſpiration to be much affected. The larynx appeared ſomewhat deformed, and deranged. Some ſwelling likewiſe appeared between it and the right ſterno-maſtoideus muſcle;

in which part, on its being touched, conſiderable pain was felt *." He mentions the other caſe, in the following words: "I was conſulted by a man in the hoſpital, fifty-two years of age, and of a middling ſtature and habit, who had received a blow upon the right and upper part of the fore-ſide of the neck, from a perſon in a rage, who held faſt a ſtone in his hand. A great difficulty of ſwallowing ſucceeded to the preſſure, as in the caſe of the young man already mentioned, but not ſo great anxiety. As the pain did not remit at all for at leaſt three hours afterwards, he came to the hoſpital †." He immediately reſtored both patients by employing the eaſy method of cure, which I ſhall immediately mention, out of the ſame author's works. I myſelf likewiſe made trial of the ſame kind of treatment in a woman who for twenty hours had not been able to ſwallow any thing, and could ſcarcely ſpeak. For beſides the difficulty of ſwallowing, of which ſhe complained, ſhe had loſt the power of ſpeech to a conſiderable degree. Her throat had been compreſſed by a perſon preſſing his hand upon it violently. Immediately calling to recollection the obſervations of Valſalva and Molinell, I relieved her of her diſtreſs in a few minutes.

* L. c. p. 4. † *Ib.* p. 6.

448. The cure is performed in the following manner: The head being held by an attendant, the fore-finger of the right hand, if the luxation

incline to the right, or that of the left-hand, if it incline to the left, is thruſt down the throat, between the tonſil and root of the tongue, upon the ſide towards which the luxation ſeems to project, or in all directions, if the ſeat of the part affected be not ſufficiently aſcertained. At the ſame time the fore and middle finger of the left hand, in the firſt-mentioned caſe, or thoſe of the right, in the other, are applied tranſverſely at the part which correſponds with the ſeat of the os hyoides. By means of the fore-finger introduced into the throat, the os hyoides is to be gently moved forward, and bent length-ways, either anteriorly or poſteriorly, according as the luxation may have happened towards the outſide or inſide, while the fingers which are applied to the neck externally regulate the degree of the preſſure. And that may be ſometimes repeated twice or thrice, until the power of ſwallowing be completely reſtored; which generally happens in a moment's time. But if the luxation have already occaſioned inflammation, the latter muſt be diſcuſſed, in order to facilitate the replacing of the bone.

OTHER SPECIES OF ANGINA.

449. To the ſpecies of the complaint already mentioned might be added, the angina proceeding from the poiſon of a mad dog, or other animals, from the ſeed of the night-ſhade, from want, from

paralyſis ſupervening on ſevere chronic diſeaſes, and, laſtly, from any thing which has been ſwallowed ſticking about the fauces*. Of which, however, ſome may be conveniently referred to the *convulſive* or *paralytic* angina, or to thoſe diſeaſes the cure of which is to be intruſted to ſurgery. It is likewiſe the province of ſurgeons to treat thoſe ſpecies of angina which ariſe from excreſcences, fungi, warts, bones, or calculi formed in the pharynx or œſophagus, from ſwelling of the thyroid gland, from enlargement and induration of the thymus, from abſceſſes, from ſarcoma, from a polypus, from a ſcirrhus, and ſimilar cauſes occaſioning difficulty of the deglutition or reſpiration; although ſeveral of theſe will perhaps be more properly treated of when I come to ſpeak of *dyſphagia*.

* Foreign bodies which have fallen into the throat, and ſtick there, if they can be inſpected, may be extracted by means of a ſmall forceps, or proper crooked inſtrument, or they may be puſhed down into the ſtomach by a piece of fine whalebone, or by a fine wax-taper, or the paſſages may be ſo lubricated by oily, fatty, and mucilaginous things, ſwallowed gradually, that they may paſs downwards. Thorns, or other ſharp-pointed bodies ſticking in the throat, if they can neither be extracted nor forced down, induce inflammation, and require bleeding; and, on ſuppuration ſupervening, they either paſs down, or are diſcharged upwards. Inſtances have occurred of the rejection of ſuch bodies in conſequence of vomiting being excited. But if they be ſharp-pointed, and ſtick in the throat, there is a riſk of their being forced in ſtill deeper by vomiting. It is attended with greater difficulty when ſuch bo-

dies enter into the trachea or bronchia. For in that caſe they either occaſion immediate death by ſtopping the breath, or induce lingering pulmonary affections. It very ſeldom happens that they are diſcharged by coughing, and paſs through the mouth. I ſaw a girl of ten or twelve years of age, of a ſlender habit of body, one of whoſe fore-grinders, after being pulled by a ſurgeon, unluckily ſlipping from the forceps, fell into the fauces, and forced its way into the glottis. She was juſt on the point of being ſuffocated. A few hours afterwards, during which ſhe had been ſtruggling with death, the tooth having paſſed the ſtraitening of the larynx, and deſcending deeper into the trachea, ſhe began to feel herſelf eaſier, being only diſtreſſed with a very troubleſome cough, hiſſing ſound, and conſtant ſtertor. I adviſed the patient occaſionally to take a ſpoonful of an oily linctus, and frequently to drink a tepid, emollient decoction, and twice a-day, at leaſt, to inhale the vapour of warm water. I likewiſe left directions, that if any thing ſhould happen, as great pain, ſpitting of blood, fever, or more violent coughing, blood ſhould immediately be drawn; which in fact it became neceſſary to do once a few days after, on account of a kind of pleuritic pain and fever which aroſe, accompanied with a rougher cough, and an expectoration tinged with blood. But, in conſequence of this regimen being continued, and the paſſages becoming relaxed, one morning after the girl had got out of bed, being ſeized with the cough, as uſual, but uncommonly violent, ſhe felt ſomething riſing up to the larynx, and told her mother that the tooth would immediately make its appearance. The truth of which was juſtified by the event. For ſhortly afterwards, having diſcharged the tooth, ſhe was completely freed from the cough and rattling in the throat. It is proper, however, to obſerve, that on inſpecting and handling the fauces, nothing foreign was diſcovered in them, nor was any pain felt. Many eminent phyſicians and ſurgeons, on making the experiment, have diſcovered this. The cough was never abſent, frequently a difficulty of breathing ſupervened, and, which is particularly worthy of notice, during the day-time, the hiſſing

and rattling, while ſhe breathed, not unfrequently ceaſed after the firſt days of the complaint, probably in conſequence of the tooth paſſing lower down while ſhe ſtood in the erect poſture; but they invariably returned whenever ſhe went to bed and lay in the horizontal poſture, the tooth, as it would appear, then getting higher up. This fortunate event did not take place until ſix weeks after the accident had happened; and thus, by the joint aid of nature and medicine, was the patient reſcued from her perilous ſituation.

END OF THE FOURTH VOLUME.

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